IIC SIGCE Annual Report 2024–25

A. About IIC at SIGCE

The Ministry of Human Resource Development (MHRD), Government of India, has established the Innovation Cell (MIC) with the objective of systematically cultivating a culture of innovation within Higher Education Institutions (HEIs). The principal mandate of MIC is to encourage, inspire, and nurture young minds by supporting them in conceptualizing novel ideas and transforming these into tangible prototypes.

Major Focus Areas

- Establishing a vibrant and sustainable local innovation ecosystem.
- Creating mechanisms to support start-up initiatives within Higher Education Institutions.
- Preparing the institution for evaluation under the Atal Ranking of Institutions on Innovation Achievements (ARIIA) Framework.
- Building a functional ecosystem for idea scouting and pre-incubation of innovative concepts.
- Enhancing the cognitive and problem-solving abilities of students in technology domains.

Vision

To build a lively local innovation community at the institute to encourage an entrepreneurial mindset, support creativity, and promote activities driven by innovation among students and faculty.

Mission

- To cultivate and encourage an innovative mindset among students for addressing socially relevant challenges.
- To actively contribute towards Institutional Innovation Rankings.
- To promote a learner-centric approach that emphasizes entrepreneurial skills and capacity building.
- To create and sustain an enabling ecosystem that supports start-ups and entrepreneurial ventures initiated by students, faculty, and staff.

The journey of IIC established at the Institute

The Institution's Innovation Council (IIC) at **Smt. Indira Gandhi College of Engineering** was established with the vision of fostering creativity, innovation, and entrepreneurship among students and faculty members. Guided by the Ministry of Education's Innovation Cell (MIC), the council has been actively working to build a culture of idea generation, problem-solving, and start-up readiness within the institute.

Over the last **two years**, the IIC has maintained a **rating**, which reflects the initial stage of its journey. This rating signifies the council's early efforts and provides a benchmark for future improvement. Despite being at the foundational level, the council has conducted activities such as innovation awareness sessions, workshops, expert interactions, and idea presentation platforms. These initiatives have gradually engaged students and created awareness about innovation and entrepreneurial opportunities.

The journey so far has been one of learning, experimentation, and capacity building. With a clear roadmap for growth, the IIC now aspires to strengthen its ecosystem by enhancing participation, organizing impactful events, encouraging student start-ups, and collaborating with industry mentors.

Future Roadmap: Action Plan for the Next 3 Years

Year 1 (Strengthening the Foundation):

- Increase the number of innovation-focused workshops, hackathons, and prototype competitions.
- Build stronger student participation by forming dedicated innovation and entrepreneurship clubs.
- Initiate collaborations with local industry experts for mentorship.
- Establish structured documentation and reporting practices to improve annual IIC performance scores.

Year 2 (Scaling Activities and Industry Linkages):

- Set up pre-incubation support to help students develop and refine their ideas.
- Encourage participation in national-level innovation competitions and ARIIA framework activities.
- Strengthen industry-academia partnerships to provide students with real-world problem statements.
- Organize faculty development programs (FDPs) to integrate innovation-driven learning in curriculum.

Year 3 (Towards Higher Recognition):

- Establish a fully functional incubation cell within the institute.
- Support student and faculty start-ups in securing seed funding and pitching to investors.
- Aim to achieve higher star ratings in IIC performance evaluation.

- Showcase institutional innovations at regional and national forums, positioning the college as an innovation-driven hub.

Though the IIC at Smt. Indira Gandhi College of Engineering is currently at a **an initial-level rating**, its two-year journey demonstrates steady progress and the groundwork for future success. With a structured roadmap in place, the council is determined to evolve into a vibrant ecosystem that nurtures innovation, empowers student entrepreneurs, and contributes to the nation's innovation landscape.

The summary of activities conducted by the IIC SIGCE during the academic year 2024-25 are listed below.

IIC calendar Activities	15
MIC driven Activities	1
Self-Driven Activities	23
Celebration Day Activities	2

Diversified representation in the IIC established at the institute from industry, Interdisciplinary & Departments/ Units etc.

Startup / Alumni Entrepreneur: Dr. Tusharika Banerji **,** Founder and director, Sweekriti Asset LLP (Research and development firm)

The expert from nearby Industry / Industry association/ Ecosystem Enabler: Mr. Baban Magdum CEO, Parth Infotech Pvt Ltd.,

Mr. Sumesh Menon, Certified Corporate Director || Managing Director -India @NewPage || Certified in Advance Valuation @ NYU || Advisor || Investor || Author || Singer

FI/ Bank Investor/ Angel Investor/ VC: Ms. Chahat Hargunani, External Expert, Nearby Incubation Centre (RGCMS)

B. Brief mention of key functionaries at the IIC Institute

Sr. No.	Name of Member	Member Type (Teaching/ Nonteaching /Student/ External Expert)	Key Role/Position assigned in IIC
1	Mr. Sunil Jadhav	Teaching	President
2	Dr. Sunil Chavan	Teaching	Principal
3	Dr. V.P Patil	Teaching	Vice President
4	Dr. K. T. Patil	Teaching	Convener

5	Prof. Revti Jadhav	Teaching	Social media
6	Prof. Dipti Chandran	Teaching	Startup activity coordinator
7	Prof. Sarika Matey	Teaching	Innovation Activity
8	Prof. Manisha Hatkar	Teaching	NIRF Coordinator
9	Dr. Umakant Gohatre	Teaching	IPR activity coordinator
10	Prof. Jaspreet Kaur	Teaching	ARIIA Coordinator
11	Prof. Vishwadeep Sardar	Teaching	Internship Activity Coordinator
12	Prof. Satish Kuchiwale	Teaching	RD Cell Coordinator
13	Prof. Nirosha Uppu	Teaching	Member
14	Dr. Tusharika Banerji	External Expert, Startup / Alumni entrepreneur	Member
15	Ms. Chahat Hargunani	External Expert, Nearby Incubation Centre (RGCMS)	Member
16	Mr. Baban Magdum	External Expert, Expert from nearby Industry	Member
17	Mr. Sumesh Menon	External Expert, Expert from nearby Industry	Member
18	Anas Mohammed Khan	Student, TE Comps	Innovation coordinator
19	Sanghraj Jadhav	Student TE Comps	Startup coordinator
20	Vishalakshi More	Student TE Electrical	Internship coordinator
21	Vaishnavi Jadhav	Student TE Electrical	IPR coordinator
22	Siddiqui Danish Ahmed	Student TE Comps	Social Media coordinator

C. Portfolio/graphical/Tabular representation of Resource strength (human capital and Physical capital) of the IIC institution

Total No. of IIC Members	Teaching Faculty: 13 External members: 4 Student members: 5
Total No. of IAs	0
Total No. of faculty Mentors	0
Pre-Incubation Units, if any	Incubation and Entrepreneurship Cell

D. Highlight Facilities, Infrastructure of Pre-Incubation & Incubation kind and Student bodies/clubs engaged in promotion of Innovation and Entrepreneurship in the campus.

a. **Name of the pre- incubation Centre** - Incubation and Entrepreneurship Cell

b. Types of Services offered –
- Mentoring support
- Seed grant assistance
- Incubation facility

c. **Facilities** –
- Access to software and hardware Lab
- High Speed Internet Connectivity
- Access to Experts/Mentors/Advisory support
- Access to Library and e Library of the institution
- Access to Venture capital fund support
- Co working space at Incubation Unit
- Grand and Mini Challenges, Competitions etc
- Idea/innovation validation consultation and expert service
- PoC validation
- Provide access to avail seed/grant support/ access to Govt. schemes available like MSME.

Student Bodies/ Club –

- AI Techies Club
- IOT Club
- Coding Club
- Hacking Club
- Engineer's Club
- Eloquence Club

- FOSS Club
- IO Tech Club
- IST Student Chapter
- Electrical Engineer Student Association
- Renewable Energy Club
- Smart Grid Club
- Electrical Drives and Vehicles Club
- Training and Placement Cell

All work in collaboration with SIGCE IIC.

E. Highlight Achievements (Narrative/Graphical/tabular representation)

a. Number and Different types of I&E and IPR activities Conducted

Sr. No	Activity Type	Title
1	IIC Calendar Activity	Session/ Panel discussion with innovation and Start-up Ecosystem Enablers from the region/state/national level
2	IIC Calendar Activity	Session on Problem Solving and Ideation Workshop
3	IIC Calendar Activity	Idea Showcase: Demo Day/Exhibition/Poster Presentation of Ideas/PoC & linkage with Innovation Ambassadors/Experts for Mentorship Support.
4	IIC Calendar Activity	Workshop on “Raising Capital and Managing Finance for Startups”
5	IIC Calendar Activity	Workshop on Design Thinking, Critical thinking and Innovation Design
6	IIC Calendar Activity	Organizing Innovation & Entrepreneurship Outreach Program by involving ATLs/SICs in Schools
7	IIC Calendar Activity	Organize an Inter/Intra Institutional Idea Competition/Challenge/ Hackathon, and Reward the Best Ideas and deposition in the Institution’s YUKTI Innovation Repository
8	IIC Calendar Activity	Expert talk on "Process of Innovation Development & Technology Readiness Level (TRL)" & "Commercialization of Lab Technologies & Tech-Transfer"
9	IIC Calendar Activity	Field/Exposure Visit to Pre-incubation units such as AICTE Idea Lab, Fab lab, Makers Space, Design Centers, City MSME clusters, workshops etc.

10	IIC Calendar Activity	From Idea to Impact - Motivational Session by Successful Entrepreneur/Start-up Founder
11	IIC Calendar Activity	Workshop on Prototype/Process Design and Development
12	IIC Calendar Activity	Organize an Inter/Intra Institutional Start-up Competition and Reward Best Start-ups.
13	IIC Calendar Activity	Session on Accelerators/Incubation -Opportunities for Students & Faculties – Early-Stage Entrepreneurs.
14	IIC Calendar Activity	Organize an Inter/Intra Institutional Business Plan Competition and Reward the Best Innovations and deposition in the Institution's YUKTI Innovation Repository
15	IIC Calendar Activity	Session on Angel Investment/VC Funding Opportunity for Early Stage Entrepreneurs.
16	MIC driven Activity	Session on MIC Programs & Schemes with Dr. Abhay Jere
17	Self-driven Activity	Docker Build, Ship, and Run Applications Anywhere - Workshop
18	Self-driven Activity	career guidance webinar on "Study in Canada"
19	Self-driven Activity	Value Added Program - Python and Java
20	Self-driven Activity	Internship on – Testing of Intel Ray LLM on non-GPU destop
21	Self-driven Activity	Seminar on "Industry Exposure on UX / UI Design"
22	Self-driven Activity	VAP: No-SQL Database
23	Self-driven Activity	Circuit Design
24	Self-driven Activity	AICTE PRODUCTIZATION FELLOWSHIP 2025 CHALLENGE PARTICIPATION

25	Self-driven Activity	Webinar on “Agentic AI”
26	Self-driven Activity	IoT Data Analysis and Visualization
27	Self-driven Activity	Value Added program - Python and Java
28	Self-driven Activity	Techfest 2024 - AutoCAD Master's Challenge
29	Self-driven Activity	career guidance webinar on “Study in Canada”
30	Self-driven Activity	value-added course on "CNC Machine and Programming"
31	Self-driven Activity	MSME HACKATHON 5. O
32	Self-driven Activity	Offline training program by Campus Credential
33	Self-driven Activity	GRE-IELTS mock test by Edwise Overseas education consultant
34	Self-driven Activity	EXPERT TALK ON AI INNOVATIONS
35	Self-driven Activity	Aptitude, Technical, Soft Skill - Offline training program by Talent Battle
36	Self-driven Activity	National Level Technical Paper Presentation Competition
37	Self-driven Activity	Google Cloud GEN – AI
38	Self-driven Activity	INDUSTRIAL AUTOMATION (PLC, SCADA)
39	Self-driven Activity	Code Jam

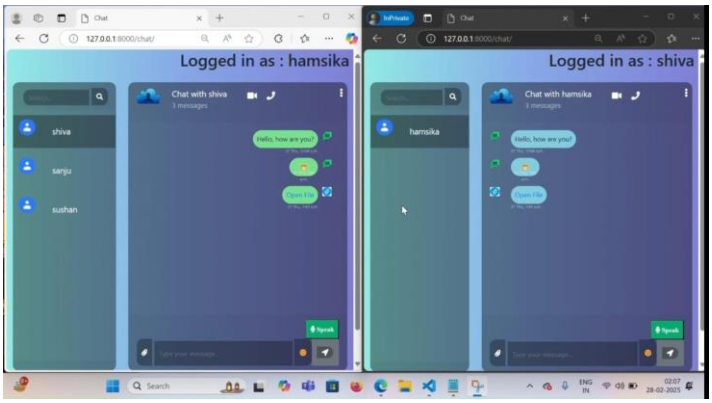
40	Celebrations	National Science Day
41	Celebrations	National Startup Day

b. No. of student's & faculty ideas generated – 18
c. No. of student's & faculty Innovation/prototypes developed - 10
d. No. of IPs generated, published and granted - 1
e. No. of Student & Faculty Start-ups/Ventures established. - 1
f. Amount spent on promotion and awareness generation on Innovation Entrepreneurship in the campus -25000
g. Amount grant or fund supported to student & Faculty lead Innovations, start-ups and IPR -0
h. No. of Technology Transfer and Commercialization happened – 0

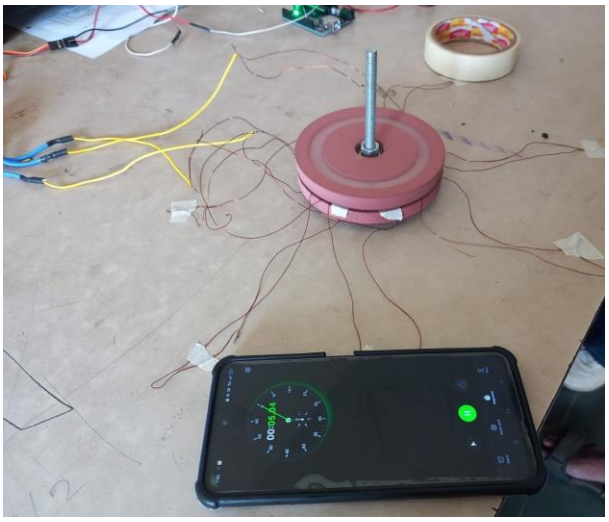
F. Highlight few best IIC Faculty/Student members and their achievements/ Rewarded for the innovations at different forum

"While there are no recorded awards this year, several innovative projects are currently in progress under the guidance of our IIC mentors."

G. Highlight selected best Innovations & images with mention of inventor/innovation name

Description	The best Innovations of each department (CSE, AIML, IOT, Electrical, Mechanical) were nominated by the respective departments through a project audit conducted by each department. The forwarded projects were further screened by the SIGCE IIC Cell Members. . Following are the Best Innovations details: - 1. **Sahana: Chat Application Inclusive and Accessible to All (Inclusive to Visually Challenged and Hearing and Speech Challenges).** **Name of Innovators: -Hamsika Deva, Sanjana Ghosh, Sushan Poojary, Prof. Deepti Vijay Chandran.** Theme: Software - Web App Development Innovation: Sahana is an inclusive chat application enabling real-time messaging with built-in text-to-speech, speech-to-text, emoji voice-over, and support for media inputs.Designed for users with visual or speech disabilities, it ensures smoother and more meaningful digital interactions for a wider audience.  2. **Transverse Flux Motor For Electric Vehicles.** **Name of Innovators: -Bhuban Umredkar, Komal Palve, Ashirwad More, Pawan Prajapati, Prof. M K Alam** Theme : Smart Vehicles/ Electric vehicle/ Electric vehicle motor and battery technology. Innovation : Traditional motors used in electric vehicles and industrial systems often suffer from limitations like low torque density, increased size, and reduced efficiency atlow speeds. With the growing demand for compact, high-performance, and energy-efficient solutions in e-mobility and automation, a better

alternative is needed. The development of a Transverse Flux Motor (TFM) addresses these challenges by offering high torque at low speed and a modular design. Thisinnovation directly supports modern energy-saving applications in sectors such as electric vehicles, robotics, and renewable energy systems, aligning well with the market's shift toward smart and green technologies. Describe the Solution / Proposed / Developed:Our solution involves the design and development of a Transverse Flux Motor (TFM) optimized for low-speed, high-torque applications. The motor consists of a U-core stator structure and disc-type rotor embedded with permanent magnets, producing transverse magnetic flux. The motor was modeled using CAD software and simulated using electromagnetic analysis tools to evaluate performance parameters. The project aims to offer an energy-efficient, compact, and high-torque alternative to traditional radial and axial flux motors. This solution is ideal or applications such as electric vehicles and robotics, where size reduction, performance, and efficiency are critical design factors.



3. **StrayTrack- A digitalized platform for efficient tracking of stray dog pickups and related health alerts.**
   Name of Innovators: - Pratiksha Zodge, Dhanashree Tiwarekar, Raj Tari, Prof Deepti Vijay Chandran
   Theme : Software - Mobile App Development. Innovation : Similar to humans, dogs experience emotions and seek comfort in familiar surroundings. After being neutered, if stray dogs are left in unfamiliar locations, they may feel disoriented, scared affecting their well-being and behaviour. This often happens due to a lack of proper tracking

and coordination in municipaloperations. To address this issue and ensure efficient care, we introduce StrayTrack an innovative app designed to help municipal corporations track, manage,and return dogs to their original locations. In today's society, where animal welfare and smart solutions are priorities, offers a compassionate and tech-driven approach. Describe the Solution / Proposed / Developed: We have created a smart digital platform designed to modernize and simplify stray dog management for municipal corporations. The app features four core modules: centralized dog records, ABC (Animal Birth Control) center data, pickup tracking, and intelligent reports & analysis. Field workers can upload real-time photos of each dog, along with pickup and drop locations, dates, and status updates. Each dog is assigned a unique ID, ensuring every detail is easily accessible. This system eliminates manual errors, boosts coordination and ensures dogs are safely returned . It brings transparency, efficiency, and accountability to urban animal care operations.

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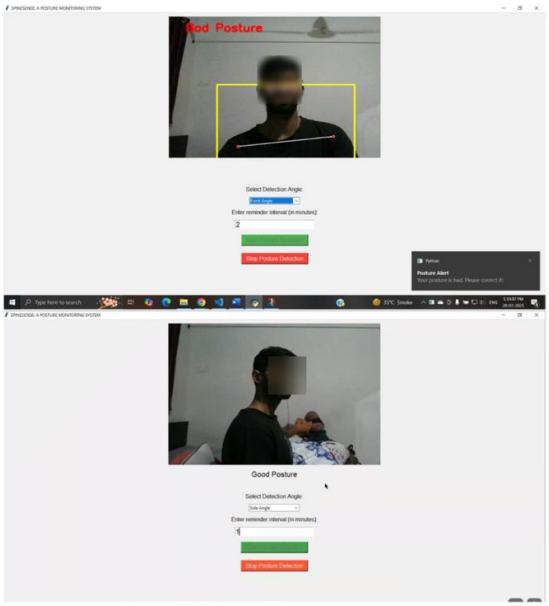
4. Spinesense : A real time posture monitor.

Name of Innovators: - Siddhant Bhalerao, Karan Birwadakar, Vedant Jadhav, Dr. Sunil Chavan

Theme: Software - Mobile App Development. Maintaining good posture during long periods of sitting is difficult and often overlooked, leading to health issues such as back pain, fatigue, and musculoskeletal disorders. Many individuals are unaware of their poor posture until discomfort arises. To address this, there is a growing need for an automated system that can monitor sitting posture in real-time. Such a solution would help users by detecting

bad posture, providing timely alerts, and encouraging regular breaks. Describe the Solution / Proposed / Developed: Monitor is an intelligent system designed to detect and correct poor sitting posture using custom-trained YOLOv5 models from front and side angles. It classifies posture as good or bad in real-time and alerts users when poor posture is detected, helping prevent spinal issues. A built-in timer reminds users to take breaks, encouraging healthy sitting habits. The user-friendly Tkinter-based GUI allows easy interaction. SpineSense is suitable for various environments where prolonged sitting is common, such as offices, homes, educational and healthcare settings, gaming zones, and transportation, making it a versatile solution for promoting better posture and ergonomics.



5. **Power Lift : Generating Energy through Gym**

Name of Innovators: -Vinay Koshti, Rishika Pathak, Vasnat Parab, Nidhish Dangare, Prof, Vishwadeep Sardar

Theme : Sustainable energy development. With the rise of sedentary lifestyles and increasing demand for renewable energy, there is a need to design systems that promote physical health while also contributing to clean energy generation. PowerLift addresses this dual need by converting human mechanical effort during workouts into electricity, making it especially relevant in today's health-conscious and environmentally aware society. Describe the Solution / Proposed / Developed: PowerLift is a system that integrates gym equipment, specifically a wrist curl machine, with a pneumatic

energy harvesting setup. The user's motion compresses air which is stored in a high-pressure tank. This air is later released to drive a turbine connected to an alternator, generating electricity. The generated energy is stored in batteries and can power local devices or be sent to the grid. The system also includes user tracking and incentives through RFID or biometrics.

6. IGRIS V1 – Humanoid Robot.

Name of Innovators: -Dhananjay Chaudhari, Aditya Waingankar, Madhura Garge, Prof. Sonali Deshpande

Theme : Robotics and Drones. There is a need for emotionally intelligent, human-interactive robots in education and reception roles, but existing robots are either too costly or limited in expressiveness. Most available models do not allow customization, hardware modification, or local AI integration. Educational institutes especially lack platforms to teach robotics with HRI components. Igris V1 addresses this by being a replicable, expressive humanoid platform that can be programmed for gesture mimicry, emotion simulation, and voice-based interaction. Describe the Solution / Proposed / Developed: Igris is a humanoid robot constructed with 42 servo motors distributed across its facial structure, arms, and torso. It includes over 30 DOF for gesture mimicry and facial expressions. Python and ROS control the servos, while AI models handle speech and gesture recognition. It uses MediaPipe, YOLOv8, and custom NLP models for HRI. The robot supports modular upgrades, can simulate realistic human interaction, and is designed to act as a receptionist, assistant, or teaching tool in labs.

7. Cyber Squad: A Unified Vulnerability Assessment Suite for System and Mobile Security

Name of Innovators: -Om Kadam, Siddhant Sarjerao Dutal ,Aashish Pawar, Niraj Kadam , Dr. Sunil Chavan

. Theme : ICT, cyber-physical systems, Blockchain, Cognitive computing, Cloud computing, AI & ML. Cyber threats target both traditional systems and mobile devices, but current tools are fragmented and often platform-specific. Android's vulnerability and inconsistent updates worsen the situation. Organizations need a unified, automated tool for security assessments across all digital surfaces. CyberSquad bridges this gap, offering integrated system-level and Android vulnerability scans in a single interface, enabling real-time analysis and professional reporting. Describe the Solution / Proposed / Developed: CyberSquad is a dual-mode, Python-based automated vulnerability assessment tool designed to secure both traditional systems and Android devices. It integrates system-level scanning (using Nmap and Gobuster) with Android penetration testing via ADB, offering detailed insights on CVEs, open ports, app permissions, malware detection, and misconfigurations. The tool generates structured PDF/JSON reports and utilizes APIs like VirusTotal and Vulners for threat intelligence. With its modular design, GUI-based interface, and ethical testing workflows, CyberSquad empowers cybersecurity professionals and organizations to identify and mitigate security risks efficiently across diverse platform.

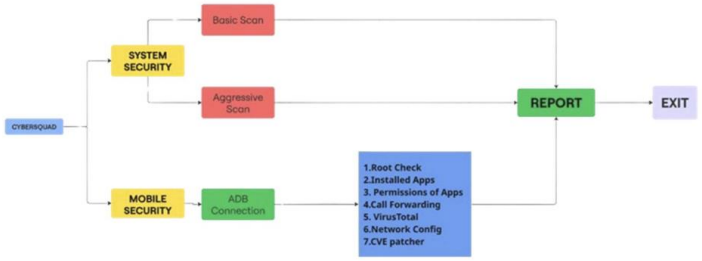
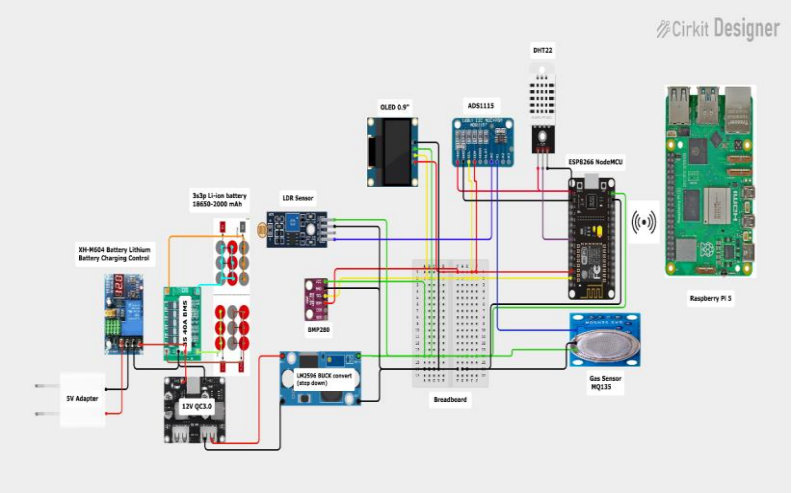


Figure 1. Flowchart of the CyberSquad Tool

8. Cloud based IOT Weather System (ML Driven Prediction)

Name of Innovators: -Rajat Achalkar, Aditya Ombale, Dr. Madhu Nashipudimath

The project addresses a pressing need for accurate, local weather forecasts amid climate change and extreme events. Traditional forecasting systems often miss microclimate nuances, hindering agriculture and disaster preparedness. This gap critically affects farmers, urban planners, and industries that depend ontimely, high-resolution weather data. Our system meets this need by leveraging real-time IoT sensing and AI-driven prediction to deliver reliable, localized forecasts. Describe the Solution / Proposed / Developed: Our solution is a cloud-based IoT weather station network with ML-powered prediction. Each sensor node (temperature, humidity, pressure, etc.) transmits data via LoRa SX1278 to a central gateway. Data is stored and processed in the cloud, where machine-learning models analyze real-time trends and generate short-term forecasts (e.g. 24–48 hours ahead). Users access predictions through a web/mobile dashboard. The system uses low-cost, low-power hardware and cloud services, making deployment flexible and scalable.



9. **Mobile app for direct market access to farmers :**

Name of Innovators: -

In India, small and marginal farmers face low profits due to multiple intermediaries in the supply chain, leading to distress sales and financial strain. Significant post-harvest losses and inflated prices also affect both farmers and consumers. With rising smartphone use and digital agriculture support, there is a need for a simple, affordable mobile-based platform connecting farmers directly with consumers. This solution can improve farmers' income, reduce food wastage, and ensure fair pricing and fresh produce for consumers. It also aligns with national goals of food security, rural economic growth, and a more transparent agricultural supply chain. Describe the Solution / Proposed / Developed: Farmer's World is a user-friendly mobile app that enables farmers to sell produce directly to consumers, eliminating intermediaries. Farmers can create product listings, set prices, and manage orders in real time, gaining full control over the sales process. Designed for ease of use, the app ensures accessibility even for those with limited digital skills. With Firebase integration, it offers secure login, real-time updates, and reliable data storage. The app enhances transparency, reduces wastage, and ensures fair pricing and faster income for farmers. Scalablity and future-ready, it can incorporate payment and logistics features, supporting sustainable, tech-driven agricultural growth.

10. **Powerlift: Electricity Generation** –

Name of Innovators: -With the rise of sedentary lifestyles and increasing demand for renewable energy, there is a need to design

	systems that promote physical health while also contributing to clean energy generation. PowerLift addresses this dual need by converting human mechanical effort during workouts into electricity, making it especially relevant in today's health-conscious and environmentally aware society. Describe the Solution / Proposed / Developed: Power Lift is a system that integrates gym equipment, specifically a wrist curl machine, with a pneumatic energy harvesting setup. The user's motion compresses air which is stored in a high-pressure tank. This air is later released to drive a turbine connected to an alternator, generating electricity. The generated energy is stored in batteries and can power local devices or be sent to the grid. The system also includes user tracking and incentives through RFID or biometrics. 11. **The Virtual Sanctuary**: - **Name of Innovators: -Muiz Zatam, Shailesh Sathe, Angad Muthalaya, Prof. Jaspreet Kaur.** The rapid loss of biodiversity represents one of the most pressing challenges of our time, with current extinction rates estimated at 100-1000 times higher than natural background rates. Understanding and monitoring biodiversity is crucial for conservation efforts, yet there remains a significant gap between the availability of scientific data and public awareness and engagement with biodiversity issues. To tackle this, initiatives for helping people learn and understand the significance of our natural environment should be undertaken. Describe the Solution / Proposed / Developed: Virtual Sanctuary serves as an end to end application built upon Global Biodiversity Information Facility, Really Simple Syndication and Generative AI for narrating storylines to provide an information kiosk upon biodiversity and lifeforms. Along with this, it provides a clear to use analytics facility that demonstrates global numbers upon species. It has an easy to navigate UI built upon React that removes the need of technical expertise in using the end application. Lastly, it integrates World Wide RSS feeds to fetch news and research articles upon the species and its environment.

11. **Face Recognition Student Attendance System** :

Name of Innovators: -

Manual attendance systems are inefficient, error-prone, and susceptible to proxy marking or tampering. In fast-paced institutions and workplaces, there's a growing demand for intelligent, contactless, and real-time attendance monitoring solutions. With increasing digital transformation, face recognition has emerged as a secure, accurate, and non-intrusive solution. Especially in post-pandemic scenarios, reducing touchpoints and ensuring hygienic attendance mechanisms has become essential. Our project addresses this need by offering an AI-powered system that minimizes human error, reduces time wastage, and promotes seamless automation in educational and professional environments. Describe the Solution / Proposed / Developed: We developed an AI-based face recognition system using OpenCV's LBPH (Local Binary Pattern Histogram) algorithm for real-time identification via webcam. The system includes three core modules: face capture and training (training.py), live detection and attendance logging (AMS_Run.py), and GUI interaction (app.py). Attendance data is stored and managed in Excel sheets using Pandas, ensuring easy analysis and reporting. A Tkinter-based user interface allows both students and administrators to interact with the system intuitively. The system also features unknown face alerts and a secure admin login for data control and review.

12. **Personal AI Assistant**:

Name of Innovators: - Name of Innovators: - Pratiksha Zodge, Dhanashree Tiwarekar, Raj Tari, Prof Deepti Vijay Chandran

	The proposed solution addresses the need for a unified, intelligent assistant that simplifies daily planning and enhances productivity. By combining task management, reminders, and AI-driven interaction, it eliminates the inefficiencies of using multiple apps. The system offers a seamless, user-friendly experience that adapts to individual needs, ensuring better time management, reduced stress, and improved focus. This smart integration supports a more organized lifestyle, aligning with modern demands for convenience, personalization, and digital well-being. Explain the uniqueness and distinctive features of the (product / process / service) solution: The uniqueness of the solution lies in its seamless integration of task management, reminders, and health-related updates with an AI-powered chatbot—all in one platform. Unlike traditional apps, it categorizes tasks as Personal or Work, offers real-time voice interactions, and provides personalized responses. The voice-enabled chatbot not only handles queries but also assists with planning, making it more interactive and user-centric. This all-in-one, intelligent system enhances productivity, minimizes app-switching, and delivers a personalized, efficient experience tailored to the user's daily routine and well-being. 

H. Highlight selected start-ups established by students/faculties with mention of founder/cofounder name

1) Name of the start-up	Netweaver Technovations Pvt. Ltd.
Sector or domain of operation	SAP Technology
Products	Training and Education
Names of founders	Parag Ghumare(Chairman & MD)
2) Name of the start-up	Gajanan Enterprises
Sector or domain of operation	Manufacturing of chemicals.
Products	Parabenzoquinone ,Karl Fischer Reagent, Toluhydroquinone, And other specialty chemicals
Names of founders	Kaustubh Gokhale(Propreitor)

I. List if any break through Innovations / Technology Developed at the institute (2-3 technology with 2-3 lines about technology and innovation.

1) Spinesense : A real time posture monitor.

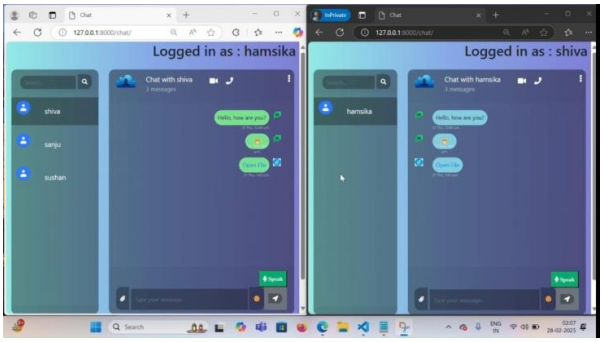
Name of Innovators: - Siddhant Bhalerao, Karan Birwadakar, Vedant Jadhav, Dr. Sunil Chavan

Theme: Software - Mobile App Development. Maintaining good posture during long periods of sitting is difficult and often overlooked, leading to health issues such as back pain, fatigue, and musculoskeletal disorders. Many individuals are unaware of their poor posture until discomfort arises. To address this, there is a growing need for an automated system that can monitor sitting posture in real-time. Such a solution would help users by detecting bad posture, providing timely alerts, and encouraging regular breaks. Describe the Solution / Proposed / Developed: Monitor is an intelligent system designed to detect and correct poor sitting posture using custom-trained YOLOv5 models from front and side angles. It classifies posture as good or bad in real-time and alerts users when poor posture is detected, helping prevent spinal issues. A built-in timer reminds users to take breaks, encouraging healthy sitting habits. The user-friendly Tkinter-based GUI allows easy interaction. SpineSense is suitable for various environments where prolonged sitting is common, such as offices, homes, educational and healthcare settings, gaming zones, and transportation, making it a versatile solution for promoting better posture and ergonomics.

2) **Sahana: Chat Application Inclusive and Accessible to All (Inclusive to Visually Challenged and Hearing and Speech Challenges).**

Name of Innovators: -Hamsika Deva, Sanjana Ghosh, Sushan Poojary, Prof. Deepti Vijay Chandran.

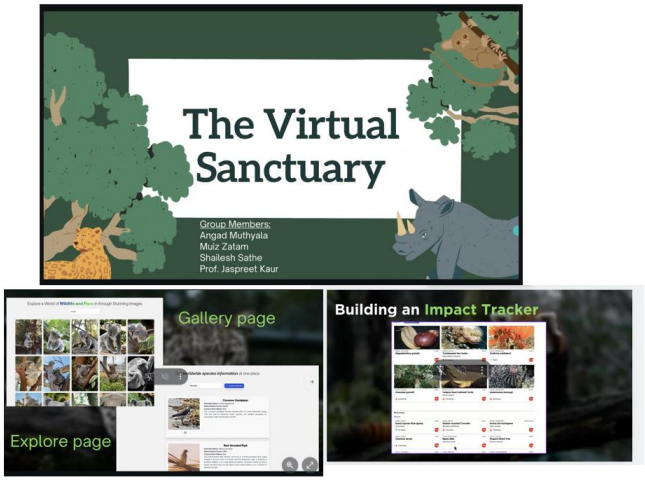
Theme : Software - Web App Development Innovation : Sahana is an inclusive chat application enabling real-time messaging with built-in text-to-speech, speech-to-text, emoji voice-over, and support for media inputs.Designed for users with visual or speech disabilities, it ensures smoother and more meaningful digital interactions for a wider audience.



3) **The Virtual Sanctuary**: -

Name of Innovators: -Muiz Zatam, Shailesh Sathe, Angad Muthalaya, Prof. Jaspreet Kaur.

The rapid loss of biodiversity represents one of the most pressing challenges of our time, with current extinction rates estimated at 100-1000 times higher than natural background rates. Understanding and monitoring biodiversity is crucial for conservation efforts, yet there remains a significant gap between the availability of scientific data and public awareness and engagement with biodiversity issues. To tackle this, initiatives for helping people learn and understand the significance of our natural environment should be undertaken. Describe the Solution / Proposed / Developed: Virtual Sanctuary serves as an end to end application built upon Global Biodiversity Information Facility, Really Simple Syndication and Generative AI for narrating storylines to provide an information kiosk upon biodiversity and lifeforms. Along with this, it provides a clear to use analytics facility that demonstrates global numbers upon species. It has an easy to navigate UI built upon React that removes the need of technical expertise in using the end application. Lastly, it integrates World Wide RSS feeds to fetch news and research articles upon the species and its environment.



4) Vocal braille: An Innovative Speech driven display for visually Impact.

Name of Innovators: -Kaushik Bhoir, Chetan Malik, Mayuresh More, Dr. K. T. Patil.

Visually impaired individuals face significant challenges in accessing printed information and learning Braille, which remains a vital tool for literacy and communication. This project presents Vocal Braille, an innovative, low-cost, and speech-driven Braille display system tat bridges this accessibility gap by integrating text-to-Braille, speech-to-Braille, and image-to-speech functionalities. The system employs a solenoid-actuated Braille cell array controlled via an Arduino microcontroller to physically render Braille characters in real-time. Users can input data through typed text, voice commands, or printed material captured via a webcam. Text and speech inputs are processed to generate corresponding Braille patterns, which are actuated using six solenoids per character. Additionally, printed text is recognized using Optical Character Recognition (OCR) via the Gemini Vision API and read aloud using a text-to-speech engine. A user-friendly Python GUI facilitates interaction and mode selection. This multi-modal, real-time system not only assists in Braille literacy and tactile learning but also enhances independence and access to information for the visually impaired community

5) Travel Assistant For visually Impact.

Name of Innovators: -Saurav Yadav, Sumit Autade, Chirag Rathod, Prof Deepti Vijay Chandran

Navigating indoor environments remains a significant challenge for visually impaired individuals. This paper presents a voice-guided augmented reality (AR)navigation system designed to enhance accessibility in indoor

spaces. The system integrates speech recognition for destination input and AR-based markers for real-time path guidnce. Developed using Unity, AndroidSpeechRecognition, and AR Foundation, the solution enables intuitive navigation without reliance on physical aids. Testing in a structured indoor setting demonstrates its effectiveness in improving mobility and independence. Future enhancements include AI- driven route optimization and multilingual support to further enhance accessibility.

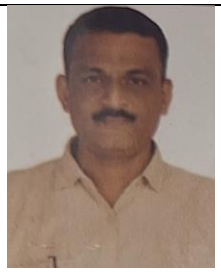
J. Participation of IIC-institute in various programs of Central and State Govt. Highlighting specially for the schemes or programs

1. Yukti 2025 Innovation Challenge-
   The three best projects of each department (CSE , AIML , IOT , Electrical , Mechanical) were nominated by the respective departments for YUKTI 2025 Innovation Challenge through a project audit conducted by each department. The forwarded projects were further screened for nomination by the SIGCE IIC Cell headed by Dr. K T Patil, Prof D V Chandran and other members of IIC Cell. After the second screening 08 projects were nominated for Yukti 2025 Innovation Challenge.
2. MSME Hackathon- SIGCE is a host institute for MSME. As part of MSME Hackathon 5.0, 76 project Ideas were submitted as part of MSME Hackathon 5.0 out of these 38 project Ideas were selected by expert panel from 5 different sectors for final review by selection committee of MSME.
3. AICTE PRODUCTIZATION FELLOWSHIP 2025 CHALLENGE- The three best projects of each department (CSE, AIML, IOT, Electrical, Mechanical) were nominated by the respective departments for APF 2025 Challenge through a project audit conducted by each department. The forwarded projects were further screened for nomination by the SIGCE IIC Cell headed by Dr. K T Patil, Prof D V Chandran and other members of IIC Cell. After the second screening 05 projects were nominated for APF 2025 Innovation Challenge.

K. Detail of social media & Connections of IIC institute

a. Instagram : sigcediaries

L. Testimonials from IIC members and external about IIC institute and IIC of MoE's Innovation Cell

Sr. No.	Member	Testimony
1)		As the President of SIGCE Institute Innovation Cell (IIC), I am proud to witness the remarkable spirit of creativity and entrepreneurship among our students and faculty. Our IIC has become a vibrant platform for transforming innovative ideas into impactful solutions. Through various activities, workshops, and competitions, we continue to nurture a culture of innovation and problem-solving. I am confident that SIGCE IIC will keep inspiring young minds to lead with innovation and contribute meaningfully to society. Mr. Sunil Jadhav IIC President
2)		As the Convener of the SIGCE Institute Innovation Cell (SIGCE IIC), I take immense pride in our continuous efforts to foster a vibrant culture of innovation and entrepreneurship on campus. As part of India's Ministry of Education (MoE) initiative, SIGCE IIC is dedicated to creating a local innovation ecosystem that inspires both students and faculty to actively engage in design thinking, problem-solving, and startup incubation.Through our carefully curated workshops, competitions, and seminars, we aim to nurture essential skills, scout promising ideas, and support their journey

		from concept to incubation, thereby strengthening the startup ecosystem at SIGCE. At SIGCE IIC, we firmly believe that “Ignited Minds are seeded on Campus,” and it is our collective responsibility to contribute to the national vision of transforming our nation into a global hub of innovation. Dr. K. T. Patil Convener
3)		Institute Innovation Council (IIC) has started in the academic year 2023-24 in our institute. The start up and innovation activities were the part of our extracurricular activity before starting up the IIC in institute. With IIC SIGCE these start up and innovation activities got a new vision and approach which makes all our technical activities more fruitful. Prof. Sarika Matey Innovation Activity
4)		SIGCE IIC has been a powerful platform for nurturing innovation, creativity, and entrepreneurship among our students. Through its activities on design thinking, start-up culture, and Intellectual Property Rights, the council has inspired students to transform ideas into impactful solutions. I am proud to be associated with SIGCE IIC, which is shaping young engineers into future innovators and leaders, Dr. Umakant Gohatre IPR activity coordinator
5)		SIGCE IIC serves as a catalyst for cultivating innovation, entrepreneurial mindset, and creative thinking, empowering students to convert their ideas into impactful ventures and preparing them to lead as future innovators. Prof. Jaspreet Kaur ARIIA Coordinator

6)		SIGCE Institute Innovation Cell (SIGCE IIC) which is a program under India's Ministry of Education (MoE) to foster a culture of innovation and entrepreneurship within Higher Education Institutions (HEIs). At SIGCE IIC we are in continuous effort to create a local innovation ecosystem, encourage students and faculty to engage in activities like design thinking, problem solving and start up incubation. Our IIC team organizes workshops, competitions, and seminars to nurture skill development, idea scouting, innovation incubation and build a stronger ecosystem for startups on our SIGCE campus. We at SIGCE IIC believe “Ignited Minds are seeded on Campus” and it is our collective responsibility to drive our national vision and mission to make our great nation an Innovation Hub. Prof Deepti Vijay Chandran Startup activity coordinator
7)		As the IIC Social Media Coordinator, I had the opportunity to showcase our institute’s innovation and startup culture through various online platforms. Promoting events and achievements helped me enhance engagement and visibility. This role improved my creativity, teamwork, and communication skills. I’m grateful to have contributed to strengthening the digital presence of our IIC. Prof. Revti Jadhav Social media
8)		As the IIC RD Cell Coordinator, I am proud to have contributed to fostering innovation and entrepreneurial spirit within our institution. The journey with the Institute Innovation Cell has been inspiring, filled with creative ideas and impactful initiatives. Working alongside passionate students and dedicated faculty has strengthened our innovation ecosystem. Together, we have transformed ideas into tangible outcomes that promote growth and problem-solving. I am grateful for

		the opportunity to be part of this vibrant and visionary platform. Prof. Satish Kuchiwale RD Cell Coordinator
9)		As an External Member of the **Institute Innovation Council (IIC)** at **SIGC College**, I have had the privilege of witnessing the institute's strong commitment towards nurturing creativity, innovation, and an entrepreneurial mindset among students. The council serves as a vibrant platform that encourages young minds to think beyond academics and transform their innovative ideas into impactful solutions. Being part of this dynamic committee has been an enriching experience. The collaborative spirit between faculty, students, and external members ensures that innovation is not just an initiative but a culture deeply embedded in the institution's ecosystem. I truly appreciate the efforts of the IIC team at SIGC College for fostering a forward-thinking environment that empowers students to become future-ready innovators and responsible leaders. Prof.. Chahat Hargunani External Member

M. Contact

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IIC Convenor:	Dr. K. T. Patil, Associate Professor, Mob: +91 9029421041 Email : Kishor.patil@sigce.edu.in