

## **PROBLEM STATEMENTS**

### **THEME: AI**

<b>PS_ID</b>	<b>Problem Statements</b>
<b>AI01</b>	AI-powered energy management system to optimize energy consumption in industrial and commercial facilities with real-time analytics
<b>AI02</b>	AI-enabled system for real-time conversion of speech to sign language using animated avatars.
<b>AI03</b>	AI-based risk prediction for clinical cases and remote patient monitoring with outpatient management application
<b>AI04</b>	Online faceless registration system with video consent verification, digital signature authentication, or AI-based sentiment analysis for documents to be registered at registration office

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AI05	AI-powered traffic management system to track driving violations such as riders without helmets, seatbelts and issuing challans for violations
AI06	AI – Based waste sorting at source – AI powered waste segregation systems to improve recycling efficiency.
AI07	Textile Waste Disposal & Recycling System – AI enabled system encouraging responsible textile waste disposal and recycling.
AI08	AI for Equipment Failure Detection: Design a system that detects early signs of equipment issues in factories.
AI09	AI-Based Sign Language Translator: Design a system that translates sign language using AI.
AI10	Post – Harvest Value Chain Optimization - AI solutions to reduce food loss and improve storage, preservation, and value addition.

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<b>AI11</b>	Develop an integrated solution to predict and monitor erosion-prone zones for shelter belt plantations by leveraging GIS-based tools, remote sensing and AI.
<b>AI12</b>	Aquaculture water quality & Disease Monitoring - Affordable AI/IoT solutions for aquatic health, disease prediction, and farmer income.
<b>AI13</b>	Rider vital monitoring for enhancing safety - Wearable AI systems to monitor rider vitals and prevent accidents
<b>AI14</b>	Tool to automatically stop the transfer of social security funds to deceased beneficiaries by integration with death registration databases, Aadhaar authentication, or periodic life certification
<b>AI15</b>	GIS-based solution for automating the approximate assessment of property tax

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### **THEME: IoT**

<b>PS_ID</b>	<b>Problem Statements</b>
<b>IoT01</b>	Automate rural water supply systems with IoT-based controls, smart metering, and real-time monitoring of tank levels and water quality
<b>IoT02</b>	IoT-based self-sustained autonomous solution for the maintenance of public toilets
<b>IoT03</b>	Seamless Ticketing Without Apps IoT-based ticketing for universal access without apps/cards Universal access and seamless ticketing system compatible with Chennai's operating conditions, eliminating the need for smartphones or physical cards.
<b>IoT04</b>	Portable Water Quality Tester: Design a device for testing water quality, especially in rural areas.
<b>IoT05</b>	IoT/software-based affordable solutions focused on optimal water quality management, hatchery practices, feeding management, disease monitoring, aquatic health monitoring,

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	biomass estimation, and farm energy use etc.,
<b>IoT6</b>	Noise Pollution Monitoring Network: Create a low-cost IoT network to track city noise pollution.
<b>IoT7</b>	Smart Parking Solution: Create an IoT sensor-based parking system to reduce city congestion
<b>IoT8</b>	Smart Traffic Management: Develop a traffic system using AI and IoT to manage city roads.
<b>IoT9</b>	Automated Vertical Farming System: Create an automated system for vertical farming in cities.
<b>IoT10</b>	Automated Waste Sorting System: Create a sorting system with computer vision and robotics for waste management.
<b>IoT11</b>	Smart Irrigation System: Develop a system using soil moisture sensors and weather data to

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	save water in urban farming.
<b>IoT12</b>	Smart Water Supply Measurement and Monitoring System for Over Head Tanks (OHTs).
<b>IoT13</b>	GPS-based tracking system for government buses with real-time monitoring such as arrival updates, seat availability, and route information (starting and ending points) by passengers
<b>IoT14</b>	Develop an integrated solution to predict and monitor erosion-prone zones for shelter belt plantations by leveraging GIS-based tools, remote sensing and AI.
<b>IoT15</b>	Cost-effective device to remotely operate heavy-duty motors at water pumping stations, monitor water levels in overhead tanks (OHT)
<b>IoT16</b>	Design an effective safety mechanism using proximity sensors with alarm systems to prevent children from falling into uncovered borewell holes/ open drainage pits
<b>IoT17</b>	Robotic boats to efficiently collect plastic waste in river/marine ecosystems and integrate

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	anti-pollutant technologies
<b>IoT18</b>	Drone-Based Forest Fire Detection: Create a drone system to spot and monitor forest fires.
<b>IoT19</b>	Solar-Powered Desalination System: Create a desalination system powered by solar energy for coastal areas.
<b>IoT20</b>	Solution to identify water leakage, detect unauthorized connections, prevent illegal water siphoning through motors, and monitor pressure levels at the tail end of the water supply distribution.

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**THEME: Health Tech**

<b>PS_ID</b>	<b>Problem Statements</b>
<b>HT01</b>	Design an accessible platform for visually and hearing-impaired students, integrating sign language and visual aids
<b>HT02</b>	Automated drug dispenser in pharmacy at hospitals during peak outpatient hours.
<b>HT03</b>	A centralized digital platform to connect all PHCs, Upgraded PHCs, and Sub Centers with the Deputy Director of Health Services (DDHS) to enable real-time monitoring of doctor attendance, healthcare services, and automated absenteeism alerts to improve healthcare delivery
<b>HT04</b>	Monitor the availability, utilization, and weekly requirements of medicines in dispensaries, hospitals, clinician centers and polyclinics
<b>HT05</b>	Monitoring of Government hospital operations and provide real-time data on all aspects of

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	patients admitted in the hospital and outpatient.
<b>HT06</b>	Wearable for Cardiovascular Monitoring: Develop a wearable device to detect early heart issues.
<b>HT07</b>	Platform to provide virtual counselling services, gamified activities, knowledge on legal rights and safety for children and women
<b>HT08</b>	Bright Medication Reminder: Develop a reminder system for elderly care to track and manage medications.
<b>HT09</b>	Low-Cost Prosthetic Limb with 3D Printing: Design a budget-friendly prosthetic limb using 3D printing.
<b>HT10</b>	Low-Cost Air Purification for Classrooms: Design an affordable air purifier for school classrooms.
<b>HT11</b>	Design a puncture-proof, abrasion-resistant water or air-filled bag capable of supporting

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	more than 100 kg of animal weight to help elevate downer or pregnant animals, facilitate recovery, and improve their mobility.
<b>HT12</b>	Device for automatic regulation of temperature in poultry farms by maintaining an optimal 35°C to prevent heat stress, reduce manual water spraying.
<b>HT13</b>	Technology to manage and reduce the accumulation of poultry litter, foul smells and fly infestations.