

# Code : Automata

Ver 2.1

## Themes

- Artificial Intelligence / Machine Learning
- Web3 / Blockchain Education
- Education Technology
- Healthcare Technology
- Agriculture Technology
- Sustainability / Green Technology

# List of Problem Statements

## Artificial Intelligence / Machine Learning

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### **AI-1: AI-Based UFDR (Universal Forensic Extraction Device Report) Analysis Tool** – Build an AI system to analyze UFDR forensic reports and extract actionable insights efficiently.

**AI-2: AI-Based Smart Allocation Engine for PM Internship Scheme** – Develop an AI-driven engine to optimally allocate candidates to internships based on skills, preferences, and eligibility.

**AI-3: Automated Technology Intelligence and Forecasting Platform** – Build an AI-powered platform to track emerging technologies and forecast future tech trends.

**AI-4: Emotion-Aware Mental Wellness Assistant** – Build an AI system that analyzes text or voice inputs to detect emotions and suggest basic mental wellness activities using NLP and ML.

**AI-5: AI-Powered Voice-Controlled Coding Assistant** – Create an AI assistant that allows developers to write, explain, and debug code using voice commands.

### **BC-1: Blockchain-Based Botanical Traceability System for Ayurvedic Herbs –**

Develop a blockchain system to trace Ayurvedic herbs with geo-tagging from collection to final formulation.

### **BC-2: Blockchain-Based Skill Credentialing System –**

Create a decentralized platform to issue, verify, and manage skill credentials securely.

### **BC-3: Blockchain-Based Supply Chain Traceability for Agricultural Produce –**

Build a decentralized system to track agricultural products from origin to consumer.

### **BC-4: Blockchain-Based Blue Carbon Registry and MRV System –**

Create a transparent Web3 system for tracking, issuing, and trading blue carbon credits.

### **BC-5: Web3-Based Digital Will and Inheritance Management System –**

Design a blockchain solution for automated transfer of digital assets using smart contracts.

## Education Technology

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### **ET-1: Smart Curriculum Activity and Attendance Management System –**

Develop an automated platform to monitor student attendance and curriculum activities.

### **ET-2: Centralized Alumni Data Management and Engagement Platform –**

Build a digital system to manage alumni data and enhance alumni engagement.

### **ET-3: Smart Timetable and Study Planner Generator –** Create an intelligent

system that generates optimized timetables and personalized study schedules.

### **ET-4: Inclusive Learning Platform for Specially-Abled Students –**

Design an accessibility-first learning platform with adaptive and assistive features.

### **ET-5: AI-Powered Assignment Evaluation and Feedback System –** Build an

AI tool to evaluate assignments and provide structured feedback to students and teachers.

**HC-1: Telemedicine Access Platform for Rural Healthcare** – Develop a digital platform to improve healthcare access for rural populations.

**HC-2: Digital Contact Tracing and MDR Pathogen Screening Tool** – Develop a system for contact tracing and screening MDR pathogens in hospitals.

**HC-3: AI-Powered Nutrition and Diet Recommendation Platform** – Create an AI system that suggests personalized diet plans based on health parameters.

**HC-4: Smart Hospital Queue and Appointment Optimization System** – Build an AI-based system to predict patient wait times and optimize appointments.

**HC-5: Blockchain-Based Secure Medical Records Management System** – Develop a blockchain solution enabling secure patient-controlled medical records.

## Agriculture Technology

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### **AG-1: Image-Based Breed Recognition for Indian Cattle and Buffaloes –**

Develop an image-based AI system to recognize and classify cattle and buffalo breeds.

### **AG-2: Digital Farm Management Portal for Livestock Biosecurity and AMU Monitoring –**

Build a digital platform to monitor biosecurity, residue limits, and antimicrobial usage in farms.

### **AG-3: Real-Time Machine Utilization Tracking for Crop Residue Management –**

Develop a system to track real-time usage of crop residue management machinery.

### **AG-4: Millets Value Chain Digital Platform –**

Create a platform to digitally manage and strengthen the millets value chain.

### **AG-5: Hedging Platform for Oilseed Price Risk Management –**

Build a digital system to help farmers hedge against oilseed price fluctuations.

## Sustainability / Green Technology

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### **SG-1: Digital O&M Monitoring System for Rural Piped Water Supply –**

Empower Gram Panchayats with low-cost digital tools for water system monitoring.

### **SG-2: AI-Driven Unified Oceanographic and Biodiversity Data Platform –**

Build a unified AI platform for oceanographic, fisheries, and biodiversity insights.

### **SG-3: Decentralized Smart Air Quality Monitoring and Pollution Analytics System –**

Develop a low-cost system for air quality monitoring and pollution source analysis.

### **SG-4: Smart Waste Segregation and Recycling Optimization System –**

Build an AI-powered system for automated waste segregation and recycling tracking.

### **SG-5: AI-Based Energy Consumption Optimization for Smart Campuses –**

Develop a system to monitor and optimize energy usage in campuses or public building.

