# PANIMALAR ENGINEERING COLLEGE

**An Autonomous Institution**

# [JAISAKTHI EDUCATIONAL TRUST]

**Approved by AICTE | Affiliated to Anna University | Recognized by UGC**

**All Eligible UG Programs are Accredited by NBA**

**Bangalore Trunk Road,Varadharajapuram, Poonamallee, Chennai- 600 123**

## INDIA'S WOMEN CENTRIC NATIONAL LEVEL 24 – HOUR HACKATHON

# TECHDIVATHON – 2.0

**She blooms. She leads. She conquers**

**Domain**:HEALTHCARE

**Problem Statements**:

| S.No | Title | Problem Statement | Description |
|---|---|---|---|
| 1 | 6G-Enabled Remote Health Monitoring for Rural Communities | Rural areas still face latency and connectivity barriers for telehealth services. | Integrates 6G IoMT devices with AI-based diagnostics to enable continuous remote health monitoring and real-time doctor consultations. |
| 2 | AI-Powered Personalized Medication and Dosage Tracker | Static medication reminders fail to adjust to patient behavior and response. | Uses AI to predict adherence patterns and adjust reminders dynamically while syncing dosage data to caregivers. |
| 3 | Emotion-Aware Wearable for Mental Health Prediction | Traditional wearables cannot detect early emotional or stress indicators. | Employs biosensors and ML to monitor cortisol, HRV, and voice tone for real-time mood detection and mental health intervention. |
| 4 | AI-Integrated Portable Emergency Health Scanner | Lack of unified portable health devices delays first response in emergencies. | Combines ECG, SpO2, and temperature sensors in one handheld scanner powered by AI for instant vital analysis. |
| 5 | IoT-Based Predictive Smart Thermometer | Basic thermometers only log data but lack predictive analysis. | Predicts fever patterns and infection risks using AI trend modeling integrated into an IoT-connected app. |
| 6 | Edge-AI Fall Detection and Prevention System for Seniors | Current fall detectors alert after incidents but can't predict risks. | Uses edge AI and motion analytics to predict falls before they happen, triggering preventive alerts. |
| 7 | Handheld AI-Driven ECG Analyzer | Existing portable ECGs lack intelligent diagnostics. | Integrates AI to analyze ECG waveforms instantly and provide early heart anomaly predictions. |
| 8 | Smartphone-Integrated Pulse Oximeter with Cloud Analytics | Standard pulse oximeters lack trend forecasting and alerts. | Connects to a cloud platform for predictive oxygen trend analysis and early hypoxia detection. |

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| 9 | Low-Cost AI Smart Pill Dispenser for Elderly Care | Manual dispensers fail to adapt to changing prescription schedules. | Uses AI for adaptive dose scheduling, caregiver notifications, and medicine stock alerts. |
| 10 | Non-Invasive Glucose Monitor using Quantum Photonic Sensors | Light-based glucose monitors lack precision and calibration. | Utilizes quantum photonic sensing for accurate, painless glucose level detection and continuous monitoring. |
| 11 | AI-Powered Multi-Disease Early Detection Platform | Existing systems detect only single diseases at a time. | Applies deep learning to analyze multi-modal medical images for simultaneous early disease identification. |
| 12 | Voice-Enabled Health Knowledge App with Offline AI Assistant | Offline users lack access to verified multilingual health data. | Provides an AI-driven voice assistant that delivers offline, region-specific health insights and emergency guidance. |
| 13 | Blockchain-Enabled Global Patient Data Interoperability System | Sharing patient data securely across institutions remains a challenge. | Implements blockchain-based smart contracts to ensure privacy-preserving, tamper-proof data exchange between providers. |
| 14 | AI Mental Health Support Chatbot with Emotion Recognition | Basic chatbots lack emotional sensitivity and real-time response. | Uses NLP and sentiment analysis to deliver personalized support, crisis detection, and counselor linkage. |
| 15 | AI Disease Outbreak Prediction and Response Dashboard | Conventional dashboards fail to analyze unstructured or social data. | Integrates AI with real-time social media and epidemiological feeds for early outbreak alerts and resource planning. |
| 16 | Personalized AI Fitness and Nutrition Optimization App | Static diet plans don't adapt to biometric changes or activity levels. | Combines wearable data and generative AI to create dynamic diet and exercise regimens in real time. |
| 17 | Intelligent Symptom-to-Response Diagnostic Assistant | Manual symptom checkers often give inaccurate or generic suggestions. | Uses generative AI to triage user symptoms, provide likely condition matches, and alert emergency services. |
| 18 | Adaptive Medication Reminder with Health Analytics Integration | Simple reminder apps don't analyze missed dosage patterns. | Tracks compliance and uses predictive analytics to modify future alerts and notify healthcare providers. |
| 19 | Smart Queue and Bed Management System for Hospitals | Manual hospital queue systems waste resources and time. | Employs AI scheduling and predictive load balancing to manage queues, staff allocation, and bed availability. |
| 20 | Multilingual AI Healthcare Translator with Voice Interface | Text-only translators can't handle complex medical conversations. | Uses neural translation and speech AI to convert doctor-patient interactions into local languages with medical accuracy. |
| 21 | IoT-Connected Interactive First Aid Guidance Kit | Users often misuse first aid tools without expert support. | Provides real-time IoT-guided first aid steps with AR visuals and connects to emergency responders automatically. |
| 22 | Real-Time Hospital Health Alert and Monitoring Grid | Patient monitoring is resource-intensive and prone to delays. | Integrates all hospital sensors into a unified AI alert grid for immediate critical condition detection |

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| 23 | Mobile AI Diagnostic and Consultation Pod for Remote Areas | Rural regions still lack scalable diagnostic access. | A portable station using AI for instant vitals scanning and live video consultation with doctors over 6G networks. |
| 24 | Smart Infant Health Monitoring Wearable with Cry Analysis | Current baby monitors can't interpret infant distress or health conditions. | Uses AI to analyze cry patterns, temperature, and HRV for early illness or discomfort detection. |
| 25 | AI-Powered Elderly Wellness and Cognitive Care Companion | Elderly monitoring systems lack emotional and cognitive tracking. | Combines health sensors, voice AI, and cognitive behavior models to detect mental decline and promote well-being |
| 26 | Smart Queue & Bed Availability System for Hospitals | Government hospitals face overcrowding and patients waste hours standing in queues. | Develop a real-time hospital resource system that tracks bed and doctor availability and issues digital queue tokens via kiosks/mobile, aiming to reduce average patient waiting time by at least 40%. |

## Reviewer's Digital Signature

**Reviewer's Name**:
**Position**:
**Organization**:
**Date:**

**Digital Signature**: