KONGU ENGINEERING COLLEGE

PERUNDURAI, ERODE – 638060

DEPARTMENT OF COMPUTER SCIENCE AND DESIGN

PRESENTS

A NATIONAL LEVEL TECHNICAL SYMPOSIUM

NEXOVATE'24

Let's Innovate

CONCEPTUAL CARNICAL – PROBLEM STATEMENTS

DOMAIN	PS- ID	PROBLEM STATEMENTS
AR/VR	PS01	Enhancing Remote Learning Experiences with Immersive AR/VR Educational Content and Interactive Simulations
	PS02	Implementing AR/VR Solutions for Medical Training, Surgical Planning, and Patient Education.
	PS03	Implementing Virtual Reality Architectural Walkthroughs: Enhancing Client Engagement and Design Visualization through Real-Time Rendering, Material Texture Simulation in Architectural Models
	PS04	Create a VR game where users dodge obstacles coming at them by physically moving their bodies. Track the head and hand movements to avoid objects and score points.
	PS05	Creating Interactive AR Shopping Experiences for Retail Stores: Virtual Try-Ons, Product Customization, and In-Store Navigation.
Machine Learning	PS06	Crop Yield Prediction: Create a model to predict crop yields for agricultural fields based on historical weather data, soil quality, crop types, farming practices, and environmental factors.
	PS07	Designing medical devices and technologies to improve patient care and outcomes. Developing diagnostic tools for early disease detection and monitoring. Creating assistive

		technologies for people with disabilities and chronic conditions
Machine Learning	PS08	Predictive Maintenance Models for Industrial Machinery Using Machine Learning Algorithms.
	PS09	Customer Purchase Prediction: Create a model to predict which products a customer is likely to purchase next based on their purchase history, browsing behaviour, demographic information, and product preferences.
Cloud Computing	PS10	Optimizing Resource Allocation in Multi-Cloud Environments for Scalability and Cost-Effectiveness
Cybersecurity	PS11	Enhancing cybersecurity measures to protect against cyber threats and data breaches.
Blockchain	PS12	Implementing Blockchain Technology for Secure and Transparent Supply Chain Management.
Automobile	PS13	Developing an Integrated Vehicle Management System: Addressing the Challenges of Fleet Optimization, Maintenance Scheduling, Fuel Efficiency, and Regulatory Compliance to Enhance Safety, Efficiency, and Sustainability in Transportation Operations.
	PS14	The automotive industry faces the challenge of enhancing fuel efficiency without compromising safety standards. To address this, there is a pressing need to develop lightweight and sustainable materials for automotive construction that can significantly reduce vehicle weight while maintaining or even enhancing safety features.
IoT	PS15	Big Data Analytics for Implementing IoT solutions for real-time tracking and management of assets in industries such as logistics, manufacturing, and supply chain management.
	PS16	Designing an integrated system for smart home automation that enhances convenience, security, and energy efficiency.

	PS17	Designing smart cities with efficient public transportation and infrastructure management systems as urban populations continue to grow, cities face increasing challenges related to traffic congestion, air pollution, inadequate infrastructure, and inefficient transportation systems
General	PS18	Developing solutions for air and water pollution control
	PS19	Design and Optimization of a Gas Turbine Engine: Develop a new design for a gas turbine engine used in power generation or aircraft propulsion. Optimize its performance parameters such as efficiency, thrust-to-weight ratio, and fuel consumption.
	PS20	Create a low-cost and efficient power distribution system for rural areas, focusing on decentralized energy sources and grid reliability.
	PS21	Implementing waste management and recycling technologies.
	PS22	The measured performance of solar panels is consistently falling short of the designed conditions due to the accumulation of dust and moisture content from the atmosphere settling on the panels. This reduced efficiency poses a significant challenge to achieving optimal energy generation and hampers the overall effectiveness of the solar energy system.
	PS23	The challenge is to create pioneering solutions that empower individuals with disabilities by effectively overcoming barriers and improving accessibility across daily activities, education, employment, and social interactions, fostering inclusivity and equal opportunities for all.

AI	PS24	Al Based Drone Application (Systems for Drone-based assessment of large size Catchment areas of Hydro Power plants and monitoring the progress of the treatment plan.)
Robotics	PS25	Robotics and automation in manufacturing, enhancing the efficiency and precision