Capstone Project Ideas

Idea (1) ; Smart Parking System
Many parking areas now contain many levels of floors. This smart parking system starts working when any vehicle approaches a entrance toll gate. Using a camera system, the image of the number plate of that vehicle is captured and the arrival time of the car inside the parking area is recorded. The system checks the availability of parking space starting from the first floor and proceed sequence. It uses cameras to detect and identify any free parking slot. When a slot is detected, it displays the slot number(Level1-25) on a display board and the same slot is not suggested to another vehicle for the next 10 minutes. The objective of the system are to save time and reduce fuel consumption. Again takes the image of number plate, as the vehicle from the camera at the exit toll gate and calculates the duration of parking and an amount for pay.

Idea(2) ;
The supermarket Security System. In this system we train an AI model in understanding human activities inside a supermarket in where to differentiate between normal and abnormal behavior. The cameras have been fixed in a way that they can view the aisles within the supermarket. when an abnormal action take place, the system detects it and sends an alert, together with the image of the unusual action to the entire security team. The main purpose for the system was to reduce theft of the product and reduce the costs spent on monitoring the CCTV.

Idea (3) ; MealPlanner
The Smart Meal Planner is an AI-powered application designed to create personalized meal plans tailored to users' specific dietary needs, preferences, and health goals. Users start by setting up a profile, inputting details like age, weight, dietary preferences, allergies, and nutritional goals, such as weight loss or muscle gain. The AI then generates customized meal plans, ensuring a balanced intake of macronutrients and essential vitamins while optimizing ingredients based on the user's pantry to reduce food waste. This app primarily targets gym-goers and hospital food management systems.

The app offers tailored recipe suggestions with detailed nutritional analysis, providing insights into calorie counts, macronutrient distribution, and alignment with the user's health objectives. It also adapts to user feedback and dynamically adjusts plans if goals change. Integration with wearable devices allows the app to monitor physical activity and adjust meal plans accordingly. Additionally, it generates smart shopping lists and could integrate with grocery services for easy ordering while considering budget constraints.

Social features like recipe sharing and dietary challenges foster community engagement. Technologies such as machine learning, NLP, nutritional databases, and API integration support the app's functionality, making healthy eating more accessible and personalized.

Option (4) ; Our previous idea
We can change our previous project to this: Develop an AI-powered app that identifies food items or ingredients from images or text, provides nutritional information, and offers personalized recipe suggestions. Users can choose preferred cuisine styles, regenerate food options, and access cooking videos via external links. The app combines image recognition, AI-driven recommendations, and user customization for a seamless meal-planning experience.