



CODESPRINT 8 - hour Hackathon

Problem Statement 01: AI-Powered Disaster Response Coordinator

Natural disasters such as floods, cyclones, earthquakes, and landslides generate a large and rapidly changing flow of information from citizens, news sources, social media platforms, and other channels. These reports can contain duplicate information, conflicting claims, incomplete details, irrelevant content, or potentially unreliable information. During such situations, emergency response teams need to identify significant incidents, understand their locations, determine the number of people or communities affected, assess the urgency of different situations, and identify immediate requirements such as food, medical assistance, shelter, and other essential resources. As reports continue to arrive from multiple sources, obtaining a concise and reliable picture of the overall situation across affected areas becomes increasingly difficult, creating challenges in prioritizing needs and coordinating timely emergency response.

Problem Statement 02: Interactive Skills Enhancer (ISE): AI-Powered Learning Platform for Children with ASD & ID

Children with Autism Spectrum Disorder (ASD) and Intellectual Disability (ID) can have diverse needs and abilities when developing social, communication, and interpersonal skills. Their learning pace, responses, interests, and performance can vary significantly, requiring learning experiences that are appropriate to their age, abilities, and individual progress. Children may encounter difficulties in understanding social situations, communicating effectively, responding appropriately to different scenarios, and developing interpersonal behaviours. Different activities and levels of difficulty may produce different responses from individual learners, while repeated and engaging practice can be important for learning. Parents, educators, and therapists also require meaningful information about a child's performance across activities and changes in progress over time. These variations create challenges in providing personalized, engaging, and measurable learning experiences for children with ASD and ID.

Problem Statement 03: AI-Powered Urban Mobility & Traffic Optimization

Urban areas are experiencing increasing transportation demand, resulting in congestion, delays, inefficient traffic movement, and unpredictable travel times. Traffic conditions can change continuously because of vehicle volumes, travel patterns, road conditions, weather, incidents, and public transportation demand. These changes can create congestion and bottlenecks at different locations and can affect connected roads and transportation routes across the city. Public transportation systems may also experience changing demand, delays, and inefficient movement of passengers and vehicles. Understanding current traffic conditions, identifying areas affected by congestion and delays, and determining how changes in traffic flow, routing, signal timing, and public transportation operations may influence overall mobility becomes increasingly complex as urban transportation networks grow. These challenges affect travel efficiency, transportation reliability, and the ability to maintain smooth movement across larger and more interconnected urban networks.