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- ⇒ Intelligent Transportation Systems : The main purpose of this topic is to manage traffic load and optimise traffic flow in efficient way. It includes main four applications (as discussed in video) i.e. Route Optimisation, Traffic signal optimisation, Fleet management and Vehicle load balancing.
- ⇒ Area Identification : Based on problem discussed in video, we selected route optimisation domain but a specific problem in route optimisation. As route optimisation includes choosing the best possible route to travel from one point to another, this route will be identified specifically based on traffic congestion and vehicle capacity.
- ⇒ Finalised Problem Statement : To maximise the probability of arriving at the destination before calculated time by selecting routes based on traffic optimisation.

→ Background and Motivation: Deterministic route planning based on average travel times fails to handle uncertainty introduced by traffic congestion and random delays. To address this, we decided to work on this problem statement where we evaluate routes based on the probability of arriving before a fixed deadline. Randomized algorithms and genetic algorithms will be used to efficiently explore the space of possible routes under uncertainty. This approach gives us reliable route selection by directly maximizing on-time arrival probability.