

## **Dynamic Safe Routing for Hazardous Material Transportation**

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We wish to develop a dynamic routing solution for transportation of hazard materials. The optimal route found by the solution should take into consideration the chance of accident, the degree of damage in case of accident, the transportation distance and/or cost, among many. The route should be dynamic in nature and hence will change adaptively as the conditions such as traffic volume and weather conditions on the planned route are evolving. We envision that the solution should be based on Monte Carlo simulation, dynamic programming, reinforcement learning, deep learning and various machine learning techniques. The student needs to have good background in machine learning, optimization, and python programming.

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