# Josh’s Contribution to the Proposal

## Heilmeier’s Questions

4. Who cares?

5. If you're successful, what difference and impact will it make, and how do you measure them (e.g., via user studies, experiments, ground truth data, etc.)?

6. What are the risks and payoffs?

7. How much will it cost?

## Answers to Heilmeier’s Questions

4. This project will impact the millions of people living and working in Los Angeles and surrounding areas such as first responders (e.g., fire fighters and ambulance drivers), the people driving in Los Angeles and surrounding areas, and city planners. Traffic accidents caused an estimated 31,720 deaths in from January to September 2021. Therefore, this will impact nearly everyone, including people who do not drive (NHTSA, 2022).

5. If successful, this project can be used by first responders will be able to use this project to more efficiently route resources to areas that are predicted to have high rates of vehicle accidents. People driving in Los Angeles and surrounding areas will be able to use this project to find routes that avoid areas predicted to have high rates of vehicles accidents or to be more alert while driving in these areas. City planners will be able to use this project to determine better methods to help alleviate traffic, mitigate the effects of vehicle collisions, and make better informed decisions concerning vehicle accidents and traffic. The way that this can be measured is through simulations, using ground truth data, user experience research, and studies following implementation to determine if serious injuries are reduced or if the number of accidents have decreased.

6. There are multiple risks with this project. One risk is that we do not encapsulate all necessary predictors and the model is a poor predictor of vehicle accidents. While many studies have generated models, for ours to be effective it needs to have a high prediction capability. Another risk is that we are not able to obtain enough data to train, validate, and test our models or that the datasets obtained are disparate and integrating them is too difficult or not possible. The payoff is that injuries, deaths, and accidents can be reduced therefore saving lives, time, and resources.

7. This project is estimated to have no cost as the government (federal, state, and local) publish the necessary datasets at no cost and many companies offer free tier (or free for students) that we can utilize.