Seattle Paramedic Deployment Optimization – Enabling Quicker Decisions

Project Title:
Seattle Paramedic Deployment Optimization – Enabling Quicker Decisions

Problem Definition:
The city of Seattle would like to best prepare their 911 operators for triggering an emergency services response. In many cases, time is of the essence and long conversions with someone who is hysterical or not capable of doing an on-scene assessment is not a course of action. Sending services for every accident is cost prohibitive. And, there's not enough time to wait for the police to arrive and phone in a request. Understanding the key differentiators, in the context of the description of the accident, will aide in guiding the operators decisions. Some factors appear to be obvious contributors, such as the weather and the time of day. Would someone send paramedics just because it's raining in Seattle? The goal is shaping these conversations, or actively listening for keywords, leading to faster deployment and saving of many lives.

Describe the Data:
We need a dataset of police-reported incidents. It should foremost identify if there were injuries involved. The data set should be robust in time (many years of data) but does not need to enable time series evaluation. There should be categorical features, such as: time of day, road conditions, weather conditions, street location and types of vehicles involved. Ordinal features should also be considered, such as: number of people, vehicles, pedestrians and bicyclists involved. There shouldn't be a need for hospital outcomes data or insurance adjuster reports to further assess the severity of the accident. There's no need for specific geographic location since the location is already confined to the city of Seattle and would lead to a sparse model. The data collection and feature engineering should allow for a model such that reasonable confidence can be achieved with the accuracy of the outcomes. The outcome is to a yes/no answer on whether to send paramedics. The model will not to assess the level of severity, number of injured people or estimated medical bills or damage costs.