Conclusion

Today, multiple applications can be downloaded to our smartphones that provide reliable weather and traffic information. Despite these tools, accidents still tend to spike as winter and the first snowstorms arrive.

As demonstrated above, numerous factors can influence the probability of elevated car accidents such as: the amount of snow, temperature, visibility, wind, cloud cover, etc. Using several linear regression models, we concluded that the amount of snow in conjunction with cloud cover has the most significant impact on the number of accidents.

Given that accidents tend to still occur, we attempted to construct various classification models aimed at predicting accident severity based on outside influencing factors: DUI, distracted driving, driver age, etc. Splitting the severity ratings into a binary model between major and minor accidents tended to yield better and more reliable results. This binary analysis utilizing the random forest classification approach seemed to yield the best and most reliable results.

The application of machine learning models in predicting and potentially preventing accidents is an ongoing process. However further analysis in this area is sure to result in positive improvements, fewer accidents, and ultimately lives saved.