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Forest Fires

Questions from the Audience

1. **Are certain areas more prone to forest fires?**

   As we saw in the tree map earlier, there are certain states in the data set that had a greater count of forest fires than the others. Some of these states were California, Georgia, Texas, North Carolina and Florida.

2. **What are the top causes of forest fires?**

   Some of the top identifiable causes were lightning, arson, equipment use, and debris burning.

3. **Can the approximate fire size be predicted based on other features?**

   When predicting size class category, better accuracy was observed when predicting smaller fires. Additional features such as weather should be evaluated in the future.

4. **How accurately can the size of a fire be predicted?**

   Accuracy of the three models explored were all around 60%.

5. **Are there other variables that should be taken into consideration, but were not?**

   Yes, there are many other factors of forest fires that were not used in modeling.

6. **How have wildfires changed over the years?**

   There has been an increase in acres burned over the years, however, the same pattern was not observed for total fires over the years.

7. **Can understanding forest fires better, help with preventative measures?**

   Preventative measures can be taken when the cause of the fire is known. As there was a large amount of fires where the cause was unknown, these should be explored further. For some causes, such as debris burning, more restrictions could be put in place in the areas where this is observed, such as fire burning permits.

8. **What types of modeling were explored?**

   The models explored as part of this project were all classification, including random forest, KNN and gradient boosting.

9. **What improvements could be made for this project?**

   There's definitely room for improvement in the accuracy, this could be achieved through hyperparameter tuning and better balancing of the forest fire size classes.

10. **What is hyperparameter tuning?**

    Hyperparameter tuning involves selecting the optimal input parameters that generate the best model output.