

Wildfire Prediction in California

Afternoon Team 6

Pitch

We want to predict the fire risk of an area from satellite data on Google Earth Engine. Fire risk is both the likelihood of a fire igniting and the severity of the fire, if a fire were to ignite there. The KDD goal for this project is to determine what the most important features are for wildfire prevention. We will be looking at overhead images, temperature data, and the LANDFIRE datasets.

Specific Aims

1. For a specific type of land cover (environment), what is the fire risk of this plot of land (location) based on previous areas that had wildfires?

Potential Results:

- a. Can/can't identify a single type of land area that's high/low risk for wildfires
- b. Can identify how risk levels change for a single type of land area

2. For a specific type of land cover, what would be the fire intensity or speed of spread at this plot of land if there were a fire?

Potential Results:

- a. Can or cannot predict the fire intensity based on available data
- b. Can or cannot identify specific factors that contribute to fire intensity

3. What independent variables are most important in predicting whether or not a fire will happen at a location?

Potential Results:

- a. One or two variables are found to be most important in predicting fire risk
- b. None of the variables chosen are important in predicting fire risk
- c. All variables chosen are about equally important in predicting fire risk

Timeline

Week 4	Project Pitch
Week 5	Data prep
Week 6	Data prep Sprint Deliverable: functional dataset

Week 7	Build model
Week 8	Iterate on model Sprint Deliverable: functional model
Week 9	KDD on model to determine takeaways
Week 10	Make final presentation Sprint Deliverable: Final Deliverables

Team Outline

William Fuchs	Data Import & Mapping
Spencer Klawans	Data Visualization
Garrett Lew	Data Data Model Testing

Final Deliverable

Final deliverable will be a slide deck (presentation) that visualizes the data through heatmaps, charts, and graphs. We will also provide answers to the specific aim questions above if possible and interpretations of our models. Finally, we will make our source code and data available on Google Earth Engine.