Title

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Abstract

Climate change in California engenders extreme weather conditions and air quality, especially in more inland areas such as Davis. This project aims to analyze historical climate conditions in Yolo County and Davis. We were successfully able to predict future weather conditions such as temperature, solar radiation, precipitation, air quality, and other outcomes using Facebook's prophet machine learning framework for the next thirty years. The main objective of this project is to predict future climate conditions in Davis in the next 30 years. Future researchers should use the predicted data to analyze what possible effects it has on socioeconomic inequality and poverty.

Methods

We pulled data from University of California's Statewide Integrated Pest Management Program's weather data set. This data set, dating back to 1980, contains historical records of past temperature, air quality index (AQI), soil temperatures, and precipitation across Yolo County. With almost 40 years of data, we gathered enough data to successfully visualize and predict new climate trends in Yolo County. An example of historical trends of minimum temperature is shown in Figure 1 and a predicted model through 2050 is shown in Figure 2.

Figure 1

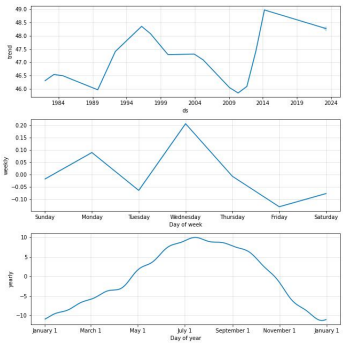
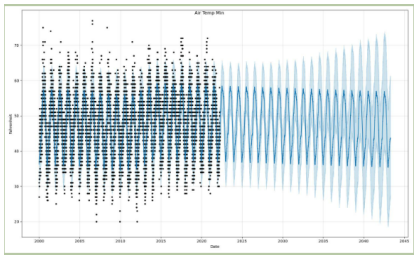


Figure 2



Interpretation and Conclusion

Based on the trends, we expect to see larger variations in minimum temperatures in the next 30 years. Yolo County policy makers should use these predictive visualizations to implement new changes to assist Davis residents who suffer from poverty.