

WILDFIRE PREDICTION



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OVERVIEW



Introduction

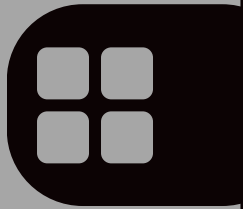
Objectives

Problem

Implementation

Theoretical

References



INTRODUCTION

This literature review examines the use of statistical learning and big data analytics for wildfire prediction. It explores methodologies such as decision trees, random forests, and neural networks, along with integrating diverse data sources. The review addresses challenges and aims to contribute to improved wildfire prediction models.





PROBLEM



01

PROBLEM STATEMENT

The problem is to explore the utilization of statistical learning and big data analytics for precise wildfire prediction.

02

PROBLEM STATEMENT

The research aims to investigate methods and challenges associated with integrating diverse data sources for enhanced prediction accuracy.



THEORETICAL



01

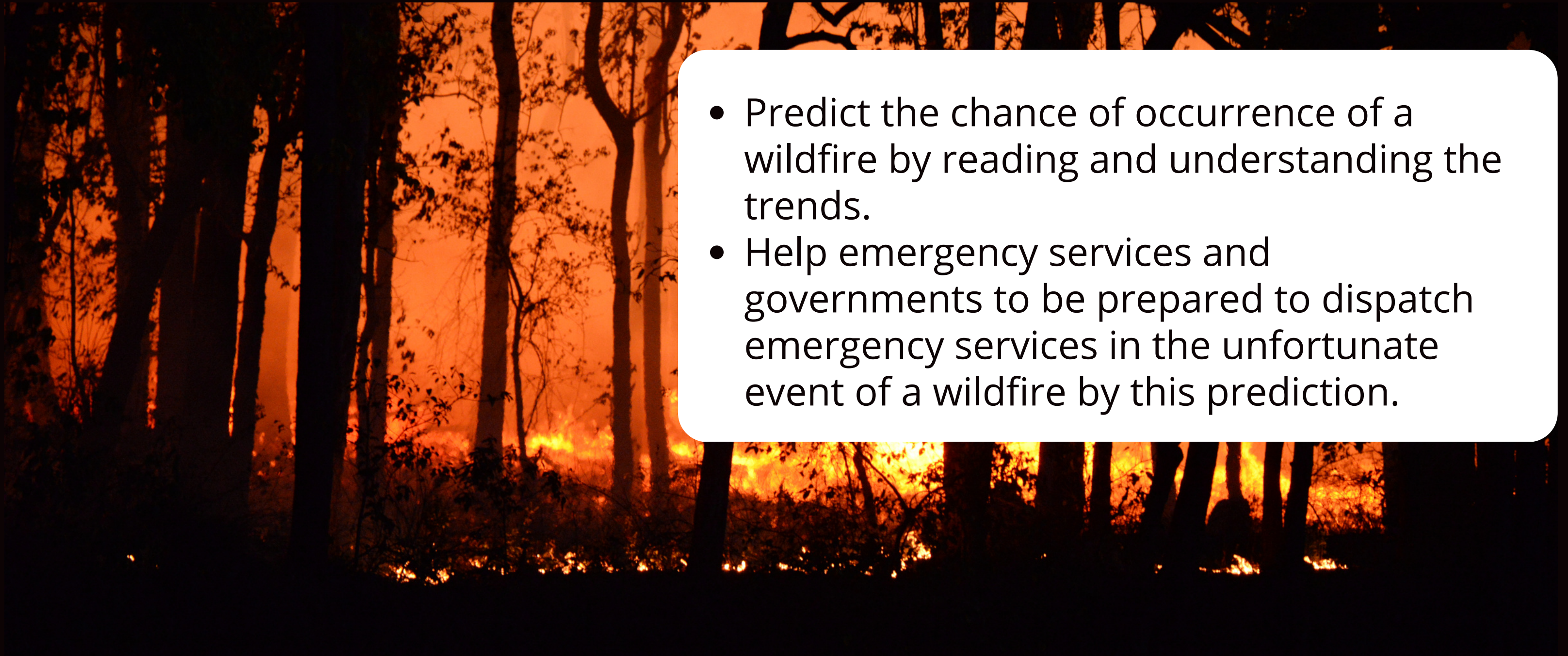
Using meteorological data such as temperature, humidity, etc. and find out which factor has the most influence

02

Creating ML models like linear regression, ridge, lasso, Random forest, etc, with neural networks and comparing these models to find the optimal model



OBJECTIVES



- Predict the chance of occurrence of a wildfire by reading and understanding the trends.
- Help emergency services and governments to be prepared to dispatch emergency services in the unfortunate event of a wildfire by this prediction.



IMPLEMENTATION



01

FIRST PHASE

Collection of Data, finding the relevant literature and research, which indicate the necessary factors helping in the prediction of wildfire occurrences.

02

SECOND PHASE

Clean, integrate, and transform the data to ensure compatibility between the models



IMPLEMENTATION



03

THIRD PHASE

Model development by using different algorithms that apply statistical machine learning and Big Data analytics techniques for prediction.

04

FOURTH PHASE

Assess model performance, conduct cross-validation, and validate predictions against actual wildfire occurrences.



REFERENCES



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"Artificial intelligence for forest fire prediction" George E. Sakr; Imad H. Elhajj; George Mitri; Uchechukwu C. Wejinya ; <https://ieeexplore.ieee.org/abstract/document/5695809>



"Predictive modeling of wildfires: A new dataset and machine learning approach".Younes Oulad Sayad a, Hajar Mousannif b, Hassan Al Moatassime; <https://www.sciencedirect.com/science/article/abs/pii/S0379711218303941>