



NARASARAOPETA ENGINEERING COLLEGE

(AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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BATCH NUMBER	AB2
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TITLE	Road Accident Prediction
DOMAIN/TECHNOLOGY	Machine Learning
BASE PAPER LINK	https://ieeexplore.ieee.org/document/9823499
DATASET LINK	https://www.kaggle.com/datasets/saurabhshahane/road-traffic-accidents
SOFTWARE REQUIREMENTS	Browser: Any latest browser like Chrome Operating System: Windows 7 Server or later Python (COLAB)
HARDWARE REQUIREMENTS	Processor: Intel® Dual Core 2.0GHz minimum Hard Disk: 1TB minimum RAM: 8GB or more

ABSTRACT

Road accidents create a significant number of serious injuries reported per year and are a chief concern of the world, mostly in underdeveloped countries. Many people have lost their near and dear ones due to these road accidents. Hence a system that can potentially save lives is required. The system detects essential contributing elements for an accident or creates a link among accidents and various factors for the occurrence of accidents. This research proposes an Accident Prediction system that can help to analyze the potential safety issues and predict whether an accident will occur or not. A comparative study of various Machine Learning Algorithms was conducted to check which model can help predict accidents more accurately. The dataset used for this paper is the government record accidents that occurred in a district in India. Logistic Regression, Random Forest, Decision Tree, K-Nearest Neighbor, XGBoost, and Support Vector Machine are among the Machine Learning models used in this paper to predict accidents. The Random Forest algorithm gave the highest accuracy of 80.78% when the accuracies of the Machine Learning models were compared.

Keywords— Machine Learning, Accident Prediction, Vehicle Safety, Traffic