Predictive Modelling of Migrant Fatalities: A Comparative Study of Machine Learning Algorithms

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Introduction

- Global Migrant fatalities represent a serious humanitarian issue that needs immediate attention and practical answers.
- Migrant Fatalities are a severe humanitarian problem that require prompt attention and workable solutions. Every year, many people die when migrating, which emphasizes how crucial it is to take preventative measures to lower risks and ensure safety.
- We can develop prediction models that improve the capacity to predict and minimize disasters in the future by examining previous events and finding significant contributing elements. Predictive modeling implementing machine learning provides a feasible answer

Methodology

- Data will be used from Humanitarian organizations, such Humanitarian Data Exchange (humdata.org) and the International Organization for Migration (IOM).
- Preprocessing will be done by cleaning datasets by addressing missing values, outliers, and inconsistencies, and normalize and encode features for uniformity and compatibility with machine learning algorithms.
- Evaluate a variety of machine learning algorithms suitable for classification tasks, such as Random Forest, Gradient Boosting Machines, Support Vector Machines, and Neural Networks. Consider their predictive performance, interpretability, and computational efficiency.
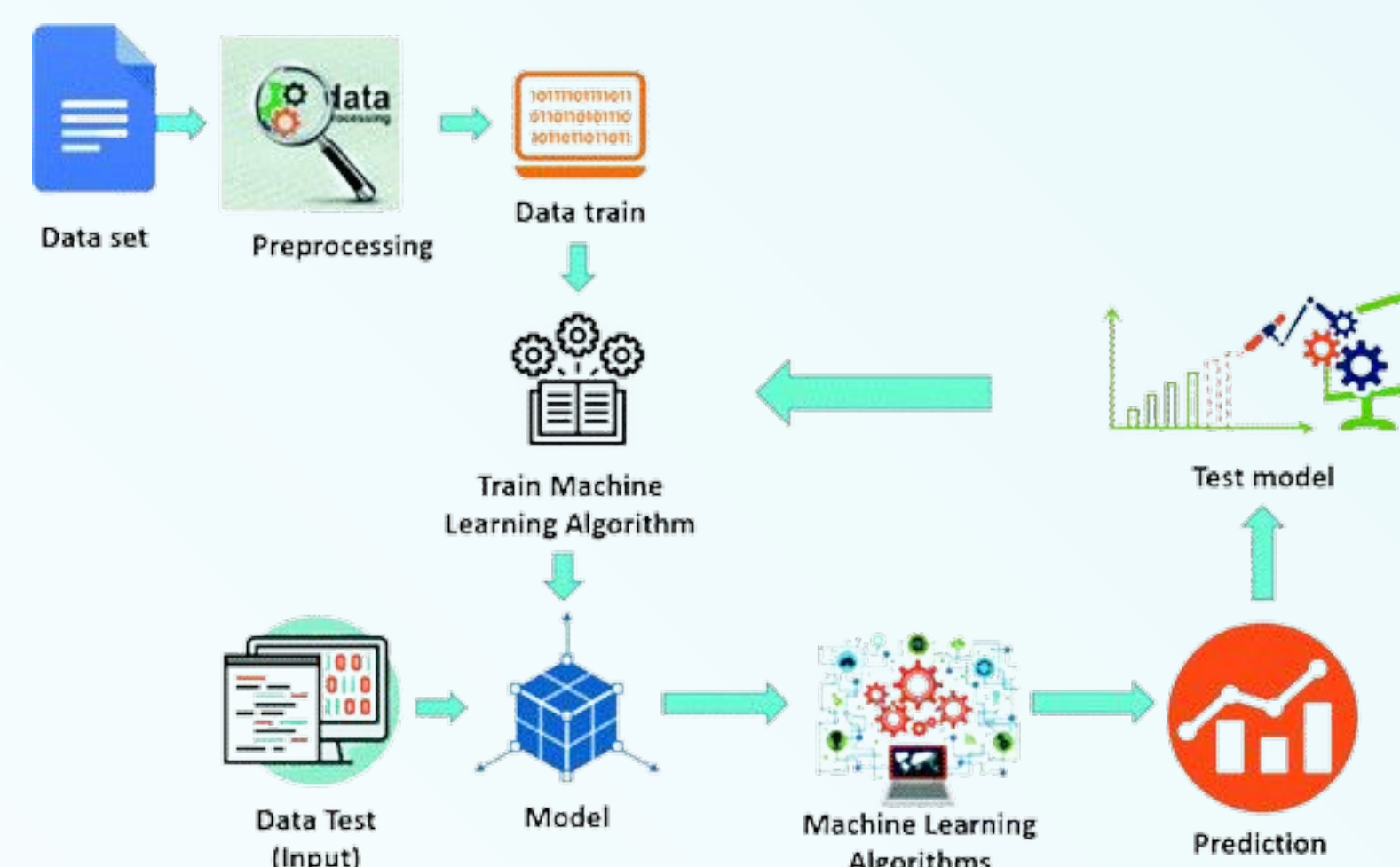
Literature Review

- The IOM analysis supports the continued growth in international migration, with 281 million migrants comprising 3.6% of the global population in 2020 (IOM, 2021).
- In order to accelerate the actions generated by predictive analysis, prescriptive analysis can make additional use of the insights and outcomes from predictive analysis.(Savadatti et al. 2022)
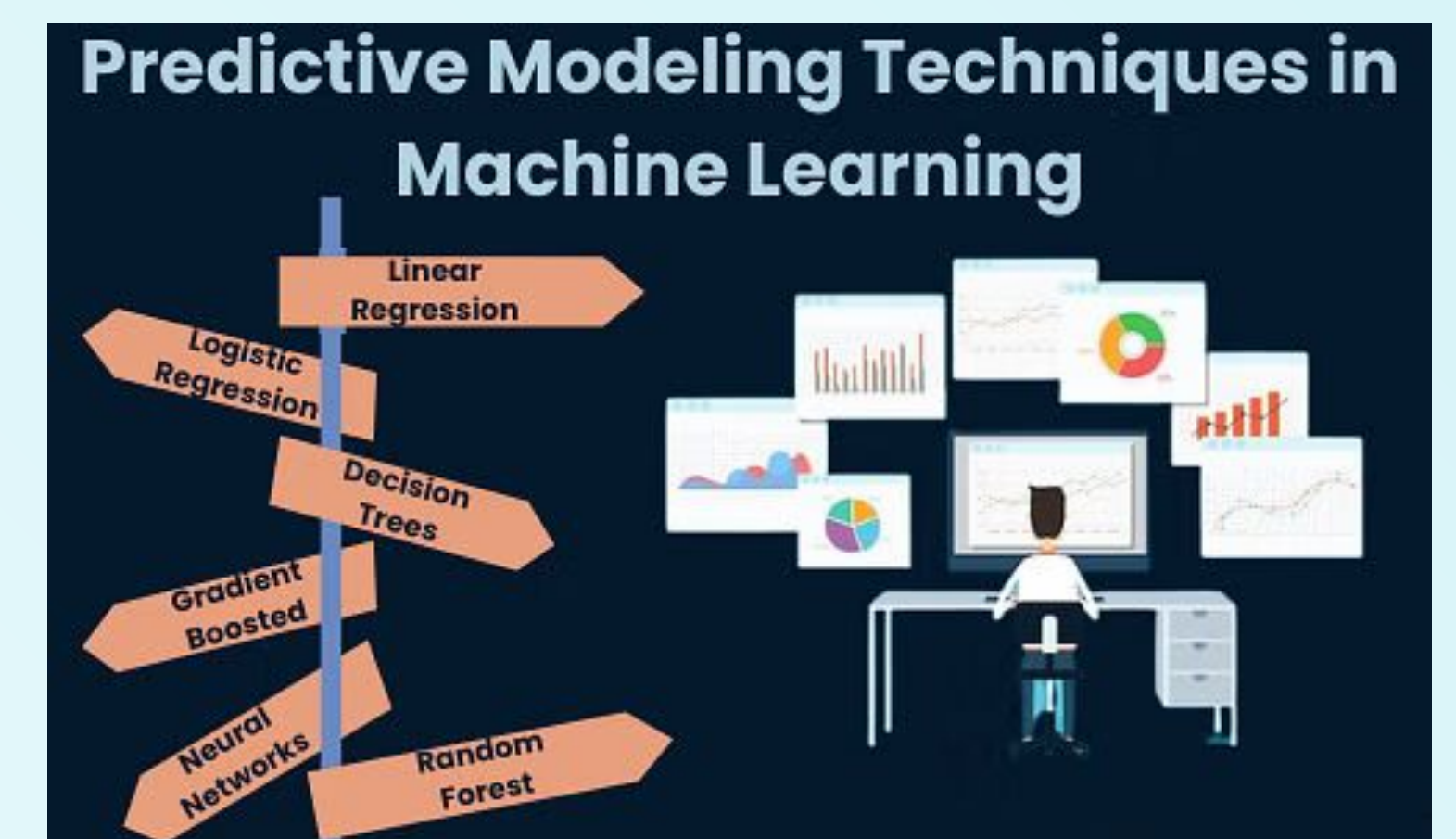
Research Questions

- How do different machine learning algorithms compare in their predictive performance for estimating migrant fatalities?
  1. Which machine learning algorithms demonstrate the highest predictive accuracy for estimating migrant fatalities?
  2. How do the results of predictive models trained on historical data generalize to new or unseen migration incidents?

Reference

- InternationalOrganizationforMigration (IOM).(2022).Annualreport2022.https://publications.iom.int/books/annual-report-2022

Research Objective

- The objective of this study is to evaluate and compare the predictive performance of different machine learning algorithms for estimating migrant fatalities. This includes assessing the accuracy of predictive models generated by various algorithms and examining their ability to generalize to new or unseen migration incidents.

Technologies