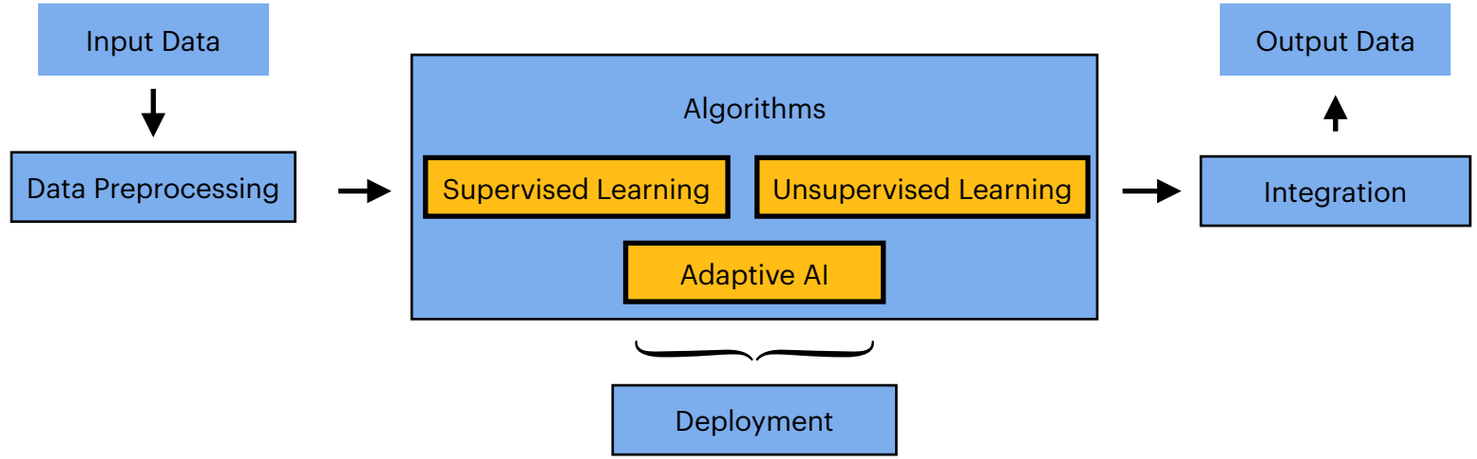
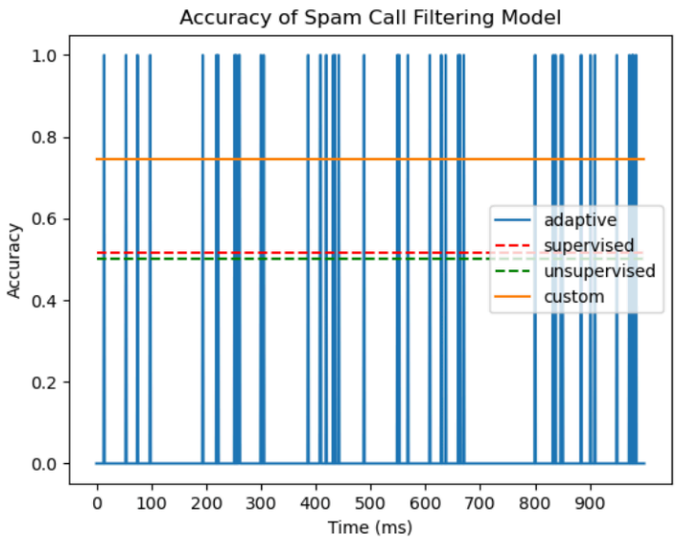
Performing a Competitive Analysis of Spam Call Detection Algorithms

Analyzing the filtering techniques of telecommunication agencies and technology partners.

Abstract Summary:
The objective of this independent research paper is to investigate common techniques such as Bayesian filtering, decision trees, and neural networks, and develop a machine-learning model to enhance the performance of spam call filtering for telecommunication companies. This will be achieved through analyzing data sets on the success rate of spam call filtering and evaluating the performance of different techniques.





Algorithm	Benefits	Trade-Offs
Supervised ML - *using a model trained with a labeled dataset of spam and non-spam calls to predict whether new calls are spam or not.*	• High (or at least, stable) accuracy • Interoperability of results • Ability to handle complex relationships between features	• Requires a large amount of labeled data (data collection process may be time and resource intensive)
Unsupervised ML - *identifying patterns and anomalies in the call data to detect spam calls.*	• Ability to detect new and unknown types of spam calls • Ability to work with unstructured data	• Less accurate than supervised ML • Results can be difficult to interpret
Adaptive AI - *building a system that can adapt to new types of spam calls as they emerge.*	• Continuous improvement of performance and detection accuracy • Can work with unstructured and noisy (i.e. uncleansed) data	• More difficult to develop and maintain than other methods • Running algorithm may be time and resource intensive

Link to paper: *https://michelledominiquedavies.info/projects/spam-calls/MDD_Research2023_Spam.pdf*