10 Aug 2025

GetSetAi innovations

GETSETAI INNOVATIONS

2025

PROJECT REPORT

Spam Shield AI

spamshieldai.in

Presented By : Abhishek Sahoo , Harsh Vaishnav
getsetai.in

Spam Shield AI

GetSetAi innovations

Abhishek Sahoo

Expertise:

Machine Learning model training

Cloud Deployment

Advance python Developer

Full-stack Development

Harsh Vaishnav

Expertise:

EDA, feature scaling

Tokenization

Model Training

optimization AI Systems

Spam Shield AI

Spam Shield AI — Complete Documentation

1. Project Documentation

Spam Shield AI Project Documentation

Overview:

This project focuses on building a robust spam detection system for text messages, leveraging a mix of

Real-world, online, and synthetic data. It follows a structured software development process from

planning to deployment on Azure.

1. Project Planning & SRS Creation

Defined the scope and objectives. Created a Software Requirements Specification (SRS) outlining

goals, constraints, and success metrics.

2. Data Collection & Composition

Gathered 75% real-world data, 15% online dataset, and 10% synthetic generated data. Merged into a

single dataset for processing.

3. Data Cleaning & Preprocessing

Removed duplicates, handled missing values, standardized text, and fixed labeling errors.

4. Exploratory Data Analysis (EDA)

Analyzed data distribution (44% spam, 56% ham). Visualized patterns using heatmaps, histograms, and

word clouds.

5. Feature Engineering

Applied tokenization, stopword removal, stemming, and lemmatization using NLTK. Performed TF-IDF

vectorization.

6. Data Encoding & Splitting

Encoded labels and split the dataset into training and testing sets for model evaluation.

7. Model Training & Selection

Tested models like Naive Bayes, Logistic Regression, SVM, Decision Tree, and Random Forest.

Selected Multinomial Naive Bayes for best accuracy.

8. Version Control & GitHub

Created a GitHub repository and committed cleaned code, dataset references, and documentation.

9. Backend Development with FastAPI

Built FastAPI endpoints to accept text input and return spam/ham classification results.

10. Deployment on Azure

Whole project and Model is deployed on Microsoft Azure for public access.

2. How We Built the Model

The Spam Shield AI model is built using a **Supervised Machine learning** approach, specifically a **Classification-type model**. **Natural Language Processing (NLP)** techniques are applied for text processing, allowing the model to understand and classify messages effectively. The model has been trained and tested on over **22,000+** data samples to ensure accuracy and robustness. For images containing text, OCR (Optical Character Recognition) technology is integrated to scan and extract textual content for further analysis. The system is primarily developed in Python, leveraging libraries and frameworks for NLP, model training, and deployment.

3. User Guide

Spam Shield AI — User Guide

This guide explains how to use the Spam Shield AI tool to check whether a message is spam or

safe (ham).

1 . Go to the Spam Shield AI Website — Open https://spamshieldai.in in your web browser.

2 .Locate the Message Box — In the "Paste your message here…" field, type or paste the text

you want to check.

3. (Optional) Upload a Screenshot — If you have a screenshot of the suspicious content, click

Choose File and select a JPG or PNG image.

4 .Click the "Analyze" Button — Press the Analyze button to start the detection process.

5. Wait for Processing — The AI will process your message or screenshot in a few seconds.

6. View the Result — You will see one of two outcomes:

• **Spam Detected** — The message is likely unwanted or harmful.

• **Ham Detected** — The message appears safe.

7. Take Action — If spam: avoid engaging, report the sender, or delete the message. If ham: you can proceed safely.

8. Note the Beta Disclaimer — The tool is in the **Testing Phase (Beta)** — results may include

false positives or false negatives.