

# 1. Building a Smarter AI Powered Spam Classifier

## Problem Definition

In machine learning, spam filtering protocols use instance-based or memory-based learning methods to identify and classify incoming spam emails based on their resemblance to stored training examples of spam emails. Spam is any unsolicited communication sent in bulk. Usually sent via email, spam is also distributed through text messages (SMS), social media, or phone calls. Spam messages often come in the form of harmless (though annoying) promotional emails. But sometimes spam is a fraudulent or malicious scam..

## Design Thinking

### 1. The First Component to Consider When Building the AI Solution Is the Problem Identification:

Before developing a product or feature, it's essential to focus on the user's pain point and figure out the value proposition (value-prop) that users can get from your product. A value proposition has to do with the value you promise to deliver to your customers should they choose to purchase your product.

### 2. Have the Right Data and Clean It:

Now, when you've framed the problem, you need to pick the right data sources. It's more critical to get high-quality data than to spend time on improving the AI model itself. Data falls under two categories

### 3. Create Algorithms:

When telling the computer what to do, you also need to choose how it will do it. That's where computer algorithms step in. Algorithms are mathematical instructions. It's necessary to create prediction or classification machine learning algorithms so, the AI model can learn from the dataset.

### 4. Train the Algorithms

Moving forward with how to create an AI, you need to train the algorithm using the collected data. It would be best to optimize the algorithm to achieve an AI model with high accuracy during the training process. However, you may need additional data to improve the accuracy of your model.

### 5. Opt for the Right Platform:

Apart from the data required to train your AI model, you need to pick the right platform for your needs. You can go for an in-house or cloud framework. What's the main difference between these frameworks? The cloud makes it easy for enterprises to experiment and grow as projects go into production and demand increases by allowing faster training and deployment of ML models.

- o In-house Frameworks

### 6. Choose a Programming Language:

There is more than one programming language, including the classic C++, Java, Python, and R. The latter two coding languages are more popular because they offer a robust set of tools such as extensive ML libraries. Make the right choice by considering your goals and needs.

## Conclusion

accurately identifying and filtering spam, individuals and organizations can focus on important emails and mitigate potential risks associated with malicious content. In conclusion, email spam detection using machine learning offers a promising solution to the pervasive problem of unwanted and harmful emails.