

 AI CERTS™

# AI+ Foundation™

Certification



## AI + Foundation

### Module -1

#### Hands-On 3:

**Title:** Classifying Emails with Machine Learning.

#### **Problem Statement:**

You are working as an intern at a tech startup that wants to create a machine learning model to automatically classify incoming emails as "Important" or "Not Important." Your challenge is to build a basic supervised learning model using a dataset of sample emails. Identify key features, train the model, and evaluate its performance. Then, discuss how the model would differ if you approached it using an unsupervised learning method like clustering.

#### **Objective:**

To develop and evaluate a supervised machine learning model that classifies incoming emails as "Important" or "Not Important" based on key textual and metadata features, and to compare this approach with an unsupervised learning method such as clustering, highlighting the differences in methodology, assumptions, and outcomes for email classification.

#### **Tools to be used:**

1. Interactive dashboard Using Streamlit



#### **Steps to be followed in Detailed manner:**

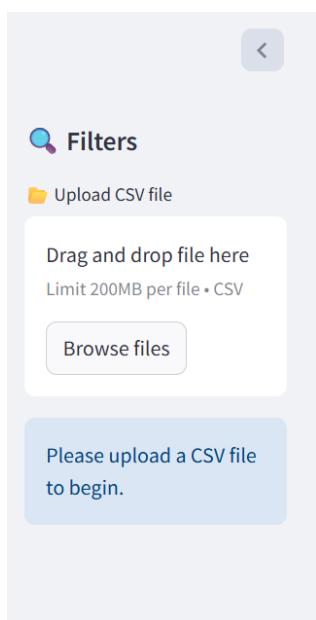
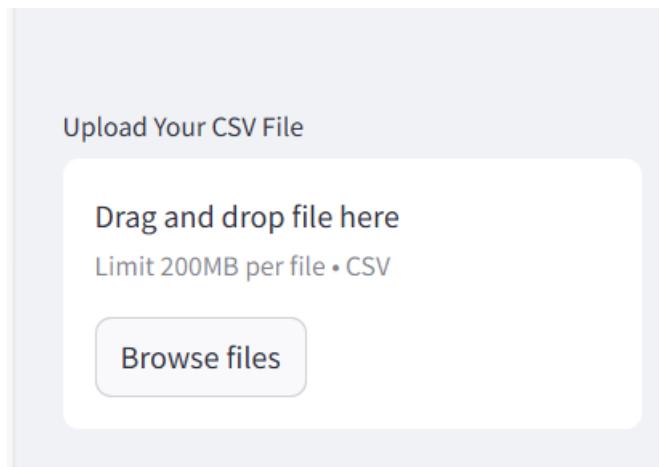
##### **Step-1: Now upload the dataset provided here:**

<https://drive.google.com/file/d/1YgiYXgGoFanDo1Pz6xFT84Ep7-9rlKfv/view?usp=sharing>

##### **Step-2: Click the link below and upload the dataset file as provided in each module section.**

[https://interactivedashboard.aicerts.ai/AI\\_Foundation\\_Lab\\_1\\_Email\\_Analysis](https://interactivedashboard.aicerts.ai/AI_Foundation_Lab_1_Email_Analysis)

#### **Sample Output:**

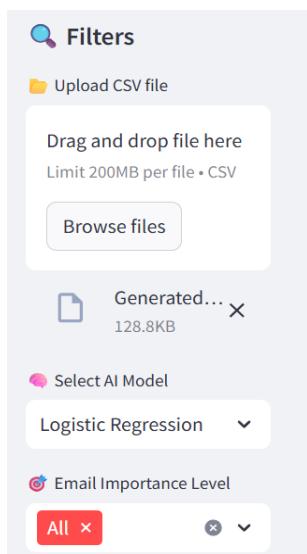


## @ Email Analysis Dashboard

### 🎯 Objective:

- Understand email sentiment trends over time
- Identify distribution of important vs. not important emails
- Visualize regional email volume to detect high-traffic areas
- Compare average sentiment across regions
- See how different AI models influence insights and filtering
- Enable non-technical users to explore data via filters
- Allow download of filtered data for further analysis

- Now the check the dashboards with all the filters on the left-hand side



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Select Region

All X

**Export Your Data**

**Download Filtered Data**

## Filtered Data Sample

	Subject	Email_Address
0	Nothing building born operation ability sure.	chad36@yahoo.com
1	Policy fire respond public mention job later company long.	curtis16@hotmail.com
2	Serious most agent certain learn laugh.	nelsonmichael@reyes.net
4	Official interview.	amandamcbride@yahoo.com
14	Almost offer protect.	jdavis@hotmail.com

Total Emails: 160

AI Model Used: Logistic Regression

- Now, Apply the different AI model, Email Importance level, Region that are used as filter.

Select AI Model

Logistic Regression X

Email Importance Level

All X

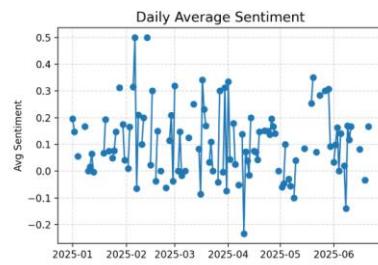
Select Region

All X

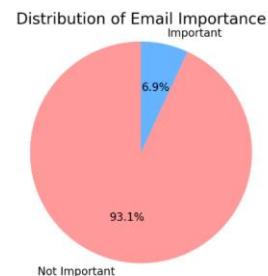
**Export Your Data**

**Download Filtered Data**

## Avg Sentiment Trend Over Time



## Email Importance Levels



Select AI Model

Logistic Regression X

Email Importance Level

All X

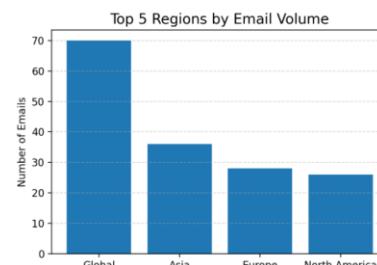
Select Region

All X

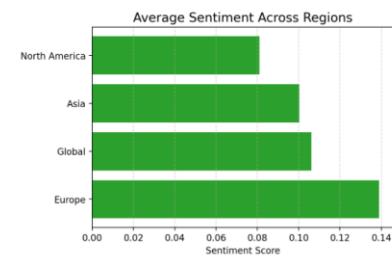
**Export Your Data**

**Download Filtered Data**

## Regional Email Volume



## Avg Sentiment by Region



Detailed Summary: Regional Sentiment

## Key Insights at a Glance

-  The region with highest volume is **Global**
-  Most positive region: **Europe**
-  Overall average sentiment score: **0.11**
-  Important emails: **6.9%** of all emails
-  Total emails analyzed: **160**

Use these insights to refine communication strategies or filter out unimportant messages.



[aicerts.ai](http://aicerts.ai)

**Contact**

252 West 37th St., Suite 1200W  
New York, NY 10018