# Anomaly Detection App - Step-by-Step Setup & Usage Guide

**Contact for Support: dipankarthirupathi@gmail.com**

## Step 1: Install Required Software

You must install these tools first, otherwise the project won't work:

1. .NET 8.0 SDK

* Go to this link: https://dotnet.microsoft.com/download/dotnet/8.0
* Download and install .NET 8.0 SDK
* After installing, open terminal or command prompt
* Type: dotnet --version
* If it shows something like 8.0.x, installation is successful

2. Docker

* For Windows or Mac: https://www.docker.com/products/docker-desktop
* For Linux: Run these commands in terminal:

sudo apt-get update && sudo apt-get install docker-ce docker-ce-cli containerd.io  
sudo usermod -aG docker $USER

* After that, restart your system to apply changes

## Step 2: Setup the Project

1. Extract Project Files

* Create a folder where you want the project to be, for example:
* On Windows: C:\AnomalyDetectionApp
* On Linux/Mac: ~/AnomalyDetectionApp
* Extract all project files into that folder

2. Create Required Folders

cd AnomalyDetectionApp  
mkdir Models data data/input data/training Config

3. Add Configuration File

* Inside Config folder, create a file called AppSettings.json
* Paste this content inside it:

{  
 "ModelSaveDirectory": "Models/",  
 "ModelFilePrefix": "savedmodel",  
 "AnomalyThresholdSettings": {  
 "IQRMultiplier": 1.5,  
 "MinThreshold": 0.8  
 }  
}

4. Add Sample Data

* Put your training data CSV at: data/training/corrected.csv
* Put your prediction data CSV at: data/input/corrected.csv

CSV should look like this:

User,Computer,Time,Date  
john,workstation1,09:30,2023-01-01  
sarah,laptop22,14:15,2023-01-01

## Step 3: Run the App without Docker

For Training the Model:

dotnet run train data/training/corrected.csv

You should see output like:

--- STARTING MODEL TRAINING ---  
ℹ️ [INFO] Fitting the anomaly detection model...  
✅ [SUCCESS] Model training completed. Saved as version 1  
ℹ️ [INFO] Model saved: Models/savedmodel1.zip

For Predictions:

dotnet run predict data/input/corrected.csv 1

You should see output with detected anomalies

## Step 4: Run the App with Docker

1. Build Docker Image

docker build -t anomaly-detector .

Check it's built with:

docker images

2. Training with Docker

docker run --rm \  
 -v "$(pwd)/Models:/data/models" \  
 -v "$(pwd)/data:/app/data" \  
 anomaly-detector train /app/data/training/corrected.csv

3. Prediction with Docker

docker run --rm \  
 -v "$(pwd)/Models:/data/models" \  
 -v "$(pwd)/data:/app/data" \  
 anomaly-detector predict /app/data/input/corrected.csv 1

## Step 5: (Optional) Run with Batch Files (Windows Only)

If you're on Windows, you can double-click files to make it easy:

* RunTraining.bat → This runs training with Docker
* RunPrediction.bat → This runs predictions with Docker

## Common Problems & Solutions

Problem | Solution

File not found | Make sure your CSV files are placed in data/training/corrected.csv and data/input/corrected.csv

Model load failed | Check if model file exists at Models/savedmodel1.zip

Docker errors (mount issue) | Use full absolute paths in -v argument for Docker

CSV format errors | Ensure your CSV has headers: User,Computer,Time,Date

No valid data rows | Make sure your time format is correct: yyyy-MM-dd HH:mm

## Final Project Structure Example

AnomalyDetectionApp/  
├── Models/ # Where trained models get saved   
├── data/   
│ ├── input/corrected.csv # Prediction data   
│ └── training/corrected.csv # Training data   
├── Config/   
│ └── AppSettings.json # Config file you created   
├── RunTraining.bat # Optional for Windows   
└── RunPrediction.bat # Optional for Windows

## Need Help? Contact Dipankar

If something doesn't work:

**Email:** [**dipankarthirupathi@gmail.com**](mailto:dipankarthirupathi@gmail.com)

**Contact: 6374779933**