



That which is of **value**, must remain of **value**

CED Tunisia

PFE Book

2025 –2026 Edition



www.cedgroup.eu

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Who we are

CED is the leading european tech claim management and expertise company

What do we do ?

We provide expert services & tech enabled solutions to help our clients manage claims or large calamities by delivering innovative combinations of people and technology

Who are our clients ?

Insurers & Bank insurer, Insurance distributors, Public authorities/ bodies, Mobility co's (e.g. leasing), Property co's (e.g. housing corporations), Vitality co's (e.g. hospitals)%

Where do we operate ?

We operate in 4 core countries: Netherlands (45%), France (35%), Belgium (8%), Spain (7%), Rest of Europe (5%)

Why Join CED Tunisia?

Opportunities for Growth

At CED Tunisia, we prioritize career development and offer our collaborators the chance to grow within the company. With a focus on training and skill-building, we provide a supportive environment where you can expand your expertise and advance in your career.

Innovative Projects

Joining CED Tunisia means being part of exciting and cutting-edge projects. We work on a wide range of innovative technology solutions, offering you the chance to engage with the latest industry trends and make a real impact on the business.

Collaborative Culture

We believe in the power of teamwork and foster a collaborative work culture. You'll work alongside talented professionals, where sharing ideas and innovations is encouraged, and everyone has the opportunity to contribute and learn.

Competitive Benefits

Joining CED Tunisia means receiving a competitive package and attractive benefits. We are committed to rewarding hard work and providing employees with the resources they need to succeed in their roles.

Partners & Key Numbers



+10
Locations

+800
Collaborators

What opportunities are offered to our PFE interns?

Carrying out your PFE internship at CED means having the opportunity to be part of a very dynamic and diverse team, where you will be accompanied, trained, and guided throughout your internship to help you gain skills and reveal your full potential.

01

Support and regular follow-up

02

Peer-Mentoring

03

Friendly environment and agile culture

04

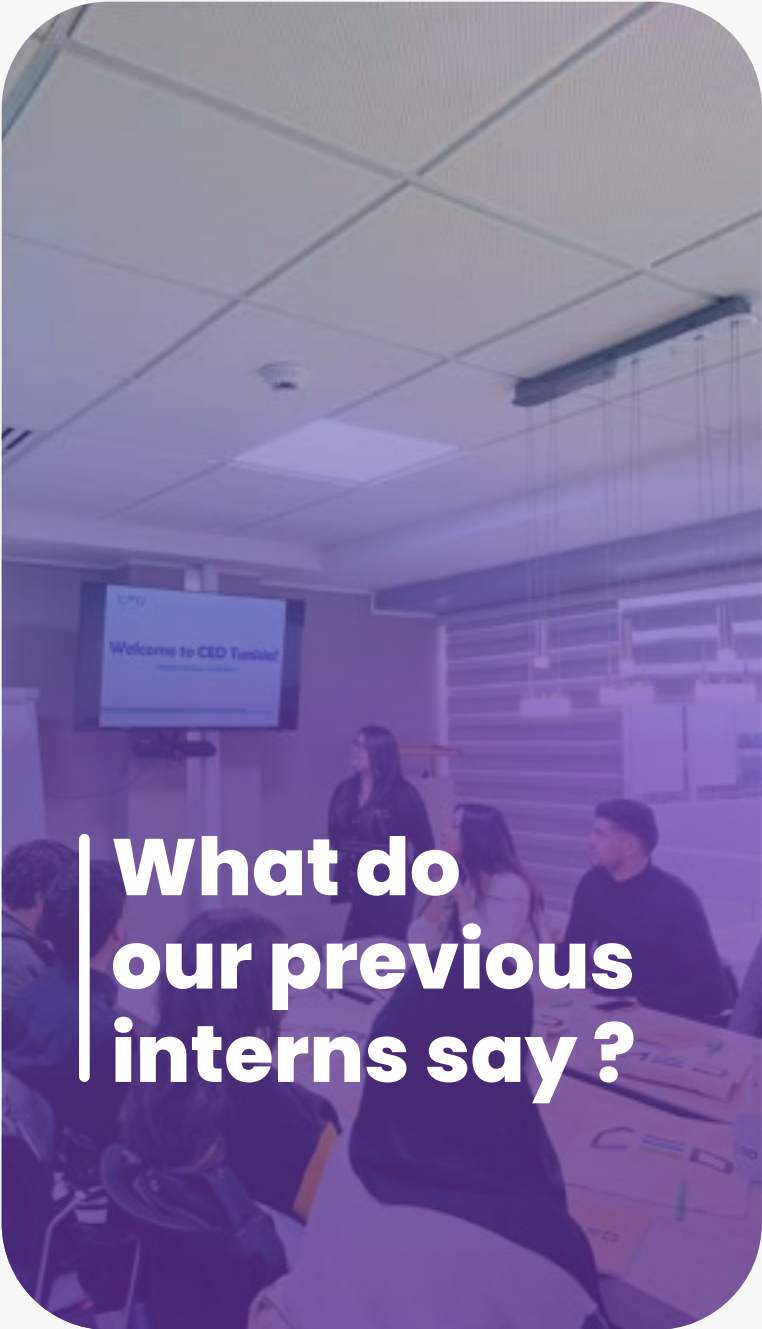
Learning advanced technologies

05

Several hiring opportunities

06

Technical and soft skills workshops



What do our previous interns say ?



Arwa ABDI

QA Engineer - [ENICarthage](#)

My internship at CED gave me hands-on experience in QA Automation, DevOps, .NET, Angular, and Azure, strengthening my troubleshooting and technical skills in a supportive environment.



Yasmine Ayed

AI Engineer - [ENSTAB](#)

At CED, I built ETL pipelines with Microsoft Fabric and contributed to AI-driven solutions improving processes and decision-making. Collaborating across teams strengthened my cloud data engineering, automation, and project delivery skills.



Ala Messaoud

Full Stack engineer - [ENICarthage](#)

At CED, I worked with the Prospect team to automate insurance case management using NLP and MLOps, gaining experience in intelligent document processing, model lifecycle management, and modern web development with .NET and Angular.



Ala Gtari

AI Engineer – [ISAMM](#)

During my internship at CED TN, I contributed as a full team member, collaborating with Business Analysis, Infrastructure, and development teams. This experience broadened my understanding of real-world project delivery and strengthened both technical and communication skills.



Amani OUESLATI

DevOps Engineer – [ENICarthage](#)

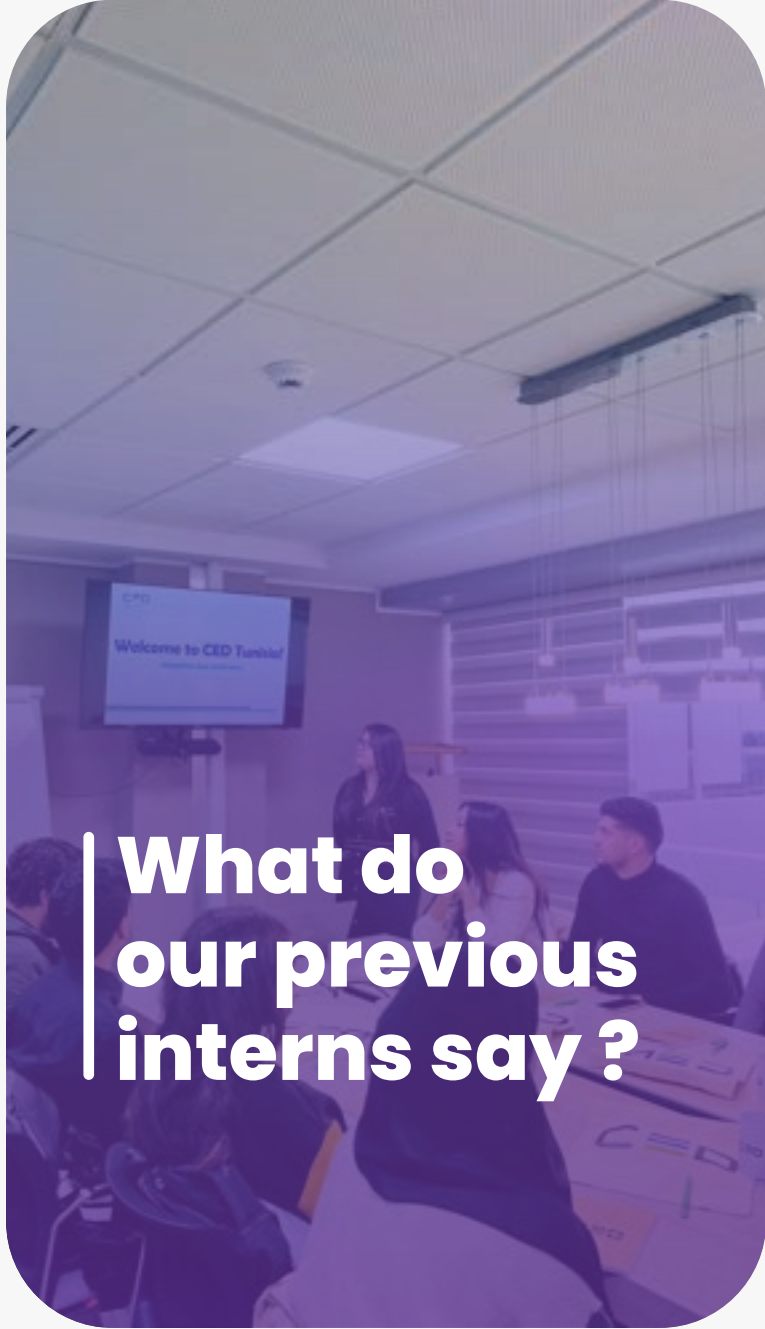
During my end-of-studies internship at CED Group as a DevOps Engineer Intern, I focused on migrating Azure Web Apps to AKS, infrastructure automation, containerization, and CI/CD pipelines. This experience strengthened my cloud and DevOps expertise and marked a key step toward becoming a DevOps Engineer.



Bassem Chouchane

Cybersecurity Engineer – [ENET'Com](#)

During my internship at CED, I contributed to a company-wide initiative to strengthen internal security awareness. This project improved my practical skills and understanding of organization-wide solution implementation, while enhancing collaboration and communication.



**What do
our previous
interns say ?**

01 Send an email

Email subject

First and last name – #Ref

Email body

Motivation letter and don't forget to join your CV pdf

Selection process

We are looking for talented and ambitious students.

To apply, please follow the following steps



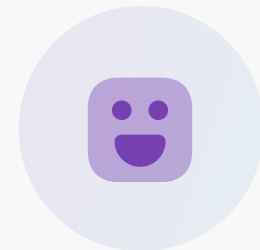
02 HR interview



03 Technical interview



04 Validation. Welcome to CED Adventure !



PFE subjects

01

Development

10 - 14

02

DevOps

15 - 16

03

Quality Assurance

17 - 18

04

Business intelligence / Security

19 - 21

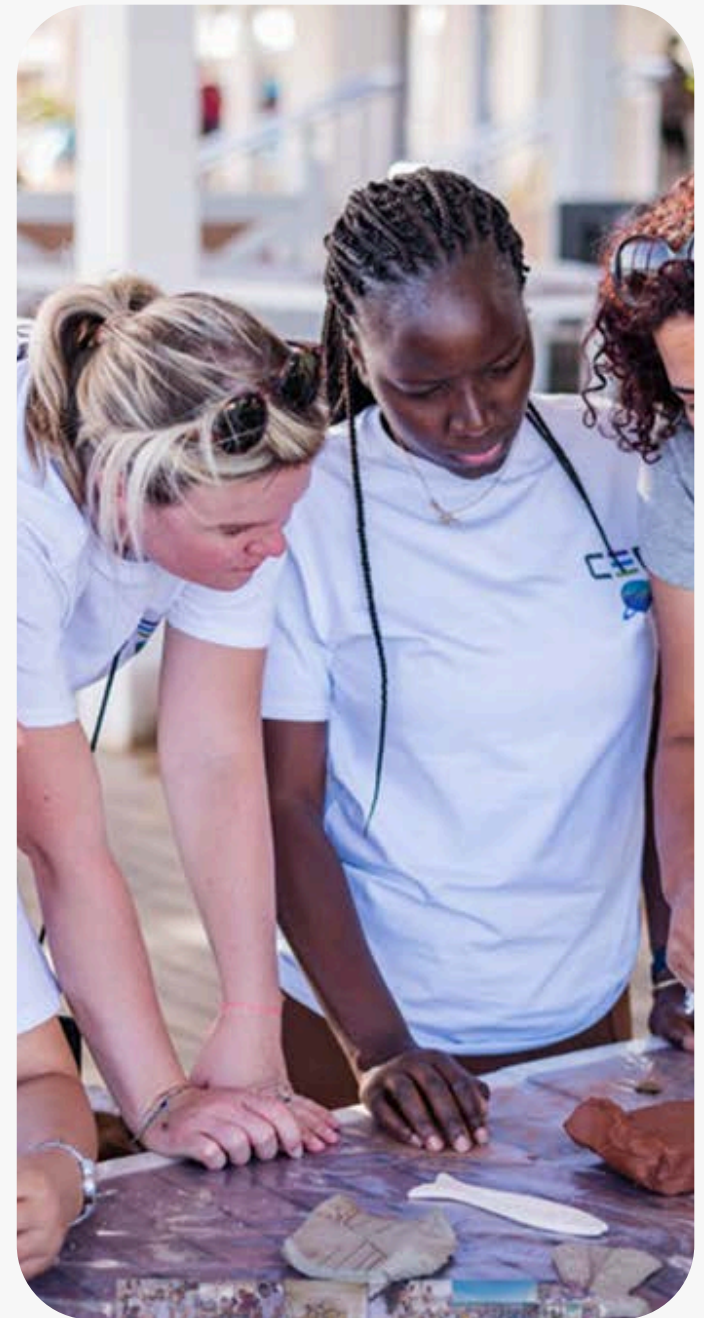
01

Development

- Live User Presence System

- Migrate And Aggregate Several Setting And Configuration Portals/Screens For The Expertise Workflow Application Into One Centralized Portal

- Design & Implement A Solution For Vat Configuration And Review Process Of Vat Calculation.



Project Ref

CED-CBC-001

SUBJECT 02

Live User Presence System



Number of interns

01



Duration of the internship

Between **4 to 6 Months**



Skills / Knowledge

#Azure

#.Net

#Angular

#SignalR

Description

In multi-user enterprise applications, such as insurance case management systems, real-time awareness of user activity is crucial. When multiple agents access the same case file or screen simultaneously, it can lead to conflicts, duplicated work, or processing delays. This project aims to develop a real-time user presence tracking system for Angular applications, allowing users to see who is currently viewing or working on a given screen. This enhances coordination, reduces errors, and improves operational efficiency.

Objectives

- Design and implement a generic, real-time tracking system to monitor which users are viewing specific Angular screen (components).
- Use the .NET SignalR SDK (self-hosted) for real-time communication.
- Create a plug-and-play Angular module and a reusable .NET backend library.
- Store presence data efficiently (in memory or using a distributed cache like Redis for scalability).
- Secure the system using JWT-based authentication to ensure only authorized users can participate in tracking.

Key Features

- Real-Time Presence Tracking: Detects and broadcasts which users are viewing a given component in real time.
- Plug-and-Play Angular Module: Delivered as an Angular library for easy integration in any Angular project.

Project Ref

CED-CBC-001

SUBJECT 02

Live User Presence System



Number of interns

01



Duration of the internship

Between **4 to 6 Months**



Skills / Knowledge

#Azure

#.Net

#Angular

#SignalR

- Reusable .NET Backend Library: Provides a SignalR hub and presence management logic, packaged as a reusable SDK.
- Self-Hosted SignalR: Uses the built-in .NET SignalR SDK hosted within the application's own infrastructure, removing dependency on Azure SignalR Service.
- Authentication and Security: Uses JWT tokens to identify and authenticate users participating in the presence tracking.
- Extensibility: Designed to support future features such as editing indicators, user roles, or analytics.

SUBJECT 03

Migrate And Aggregate Several Settings And Configuration Portals/Screens For The Expertise Workflow Application Into One Centralized Portal



Number of interns

02



Duration of the internship

Between 4 to 6 Months



Skills / Knowledge

#Microsoft Azure

#.Net

#Angular

#SQL

Description

The property expertise handling in CED is processed with the application "ProsPecT".

The handling of cases is based on dossiers and assignments which contain all involved parties, insurance objects, damage information, etc.

All these features are managed via multiple configuration portals.

The goal of this project is to provide a single configuration platform that allows to set all the necessary configuration: clients, suppliers, products, contracts, communications ...

Objectives

- Migrate Angular and .NET projects to the official version
- Design and implement new features
- Implement an authentication/authorization mechanism using Microsoft MSAL
- Deploy the resources via an Azure CI/CD pipeline

Key features

- Manage contracts properties and fees
- Manage suppliers and services
- Manage products and activities
- Manage dossier configuration (tasks, documents, communications...)

Project Ref

CED-FINCOM-001

SUBJECT 04

Design & Implement A Solution For Vat Configuration And Review Process Of Vat Calculation.



Number of interns

01



Duration of the internship

Between 4 to 6 Months



Skills / Knowledge

#Azure

#.Net

#Angular

#SQL

Description

Add a VAT configuration UI to the MDM portal and review & formalize the current VAT-calculation business rules.

Deliver a maintainable configuration model, UI for creating/editing VAT rules

Objectives

- Review and Formalize VAT Business Rules
- Design a VAT Configuration Model
- Implement VAT Configuration UI in the MDM Portal
- Integrate VAT Review & Approval Workflow

Key Features

- Create, edit, and delete VAT rules directly in the MDM portal.
- Define VAT rules based on multiple parameters
- Built-in validation to prevent conflicting or overlapping VAT rules.
- Automatic calculation preview to verify rule correctness.

02

DevOps

AI-Powered Azure DevOps & Infrastructure Automation



SUBJECT 01

AI-Powered Azure DevOps & Infrastructure Automation



Number of interns

01



Duration of the internship

Between **4 to 6 Months**



Skills / Knowledge

#Microsoft Azure

#Azure DevOps

#Python

#Azure OpenAI

#REST APIs

#Bicep

#CI/CD

#Git

#YAML

#ARM Templates

Description

In cloud development teams, provisioning Azure infrastructure and configuring DevOps pipelines requires significant expertise and time. Developers often struggle with complex Infrastructure as Code templates and pipeline configurations, leading to delays and inconsistencies.

This project addresses these challenges by creating an AI assistant that enables natural language interaction with Azure and Azure DevOps. The solution will interpret conversational commands to automate resource provisioning and pipeline creation.

Objectives

- Develop AI-powered natural language processing for Azure infrastructure commands
- Implement automated Bicep template generation from conversational input
- Create Azure DevOps pipeline automation through natural language
- Build interactive confirmation workflows for safe deployments
- Deliver a web-based interface for user interactions

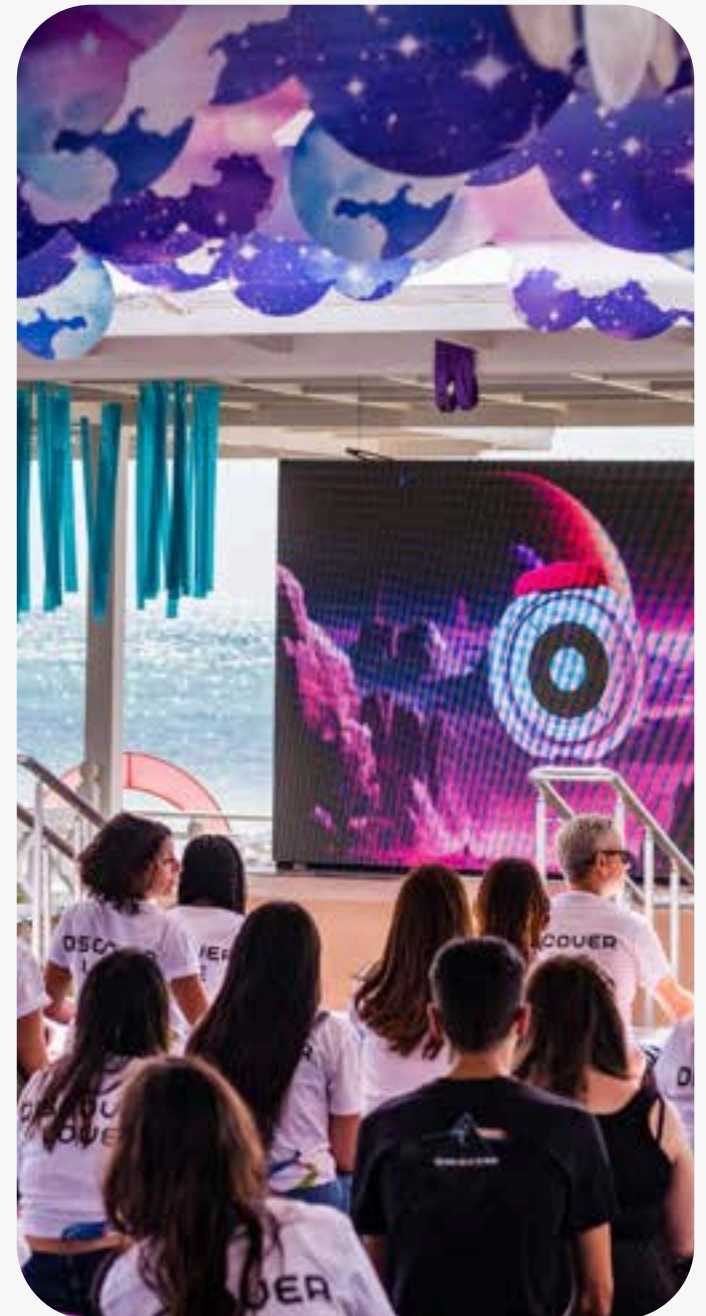
Key Features

- Natural Language to Infrastructure: Convert conversational commands into Azure resources
- Automated Pipeline Creation: Generate CI/CD pipelines from simple descriptions
- Interactive Confirmation Workflows: Safe deployment with yes/no verification
- Step-by-Step Guidance: Intelligent assistance for complex DevOps tasks

03

Quality Assurance

End-to-End QA automation and monitoring platform
using Azure DevOps and Grafana



Project Ref

CED-QA-001

SUBJECT 01

End-To-End QA Automation And Monitoring Platform Using Azure DevOps And Grafana



Number of interns

01



Duration of the internship

Between 4 to 6 Months



Skills / Knowledge

#Prometheus

#Pushgateway

#Loki

#Grafana

#Alertmanager

#Postman

#Newman CLI

#Apache JMeter

#YAML

#.NET API

Azure DevOps Pipelines

#VPN/Private Link

Description

Design and implement a hybrid testing and monitoring ecosystem integrating Azure DevOps (cloud-based CI/CD automation) with on-premise observability tools such as Prometheus, Grafana, Loki, and Alertmanager. The goal was to create a continuous quality feedback loop for a .NET backend API — combining functional testing, performance testing, and real-time monitoring within a single automated workflow.

Key Objectives

- Automate API functional and performance testing through Azure DevOps pipelines.
- Enable real-time visualization and alerting using on-premise Grafana and Prometheus.
- Establish a secure hybrid connection between cloud orchestration and internal monitoring infrastructure.
- Create a self-healing CI/CD process that re-triggers tests automatically when performance or functional regressions are detected.

04

Business Intelligence/ Security

Fabric-Powered BI Solution

Intelligent Data Governance Framework for Automated
Classification and Protection



Project Ref

CED-BI-001

SUBJECT 01

Fabric-Powered BI Solution



Number of interns

01



Duration of the internship

Between **4 to 6 Months**



Skills / Knowledge

#Microsoft Fabric & Power BI

#DAX

#Azure SQL Server

#KQL

#SQL & Python

#Delta Table

Description

This BI initiative aims to deliver a centralized Power BI dashboard for team managers to monitor performance, workload, Lead times, Fraud, management Information...

The solution will be built using Microsoft Fabric, leveraging Lakehouse architecture, ETL pipelines, and a dedicated semantic model.

SUBJECT 02

Intelligent Data Governance Framework For Automated Classification And Protection



Number of interns

01



Duration of the internship

Between 4 to 6 Months



Skills / Knowledge

#Microsoft Information Protection

#Microsoft 365 Compliance Center

#Data Governance Tools

#PowerShell

#Azure Information Protection

#AI/ML Frameworks

#Python

#Microsoft Graph API

Description

Design and implement an intelligent framework for automated document classification, labelling, and protection using AI, and Data Loss Prevention (DLP) policies.

The goal is to enhance data governance, ensure compliance with regulatory standards (e.g., GDPR), and prevent unauthorized data exposure.

Key Components:

- AI Models for content-based classification and sensitivity detection
- Data cataloging and labelling
- DLP Policies to enforce protection rules across Microsoft 365 and other platforms

Expected Outcomes:

- Automated and scalable document classification
- Consistent application of sensitivity labels
- Real-time protection against data leaks
- Improved compliance and audit readiness

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