AI Driven Entity Intelligence Risk →

Table of contents

01 → Goal of the challenge?

02 → Overview of the Technologies

03 → Workflow

04 → Intelligent Data Extraction

05 → Data Sources

06 → Risk Scoring Criteria

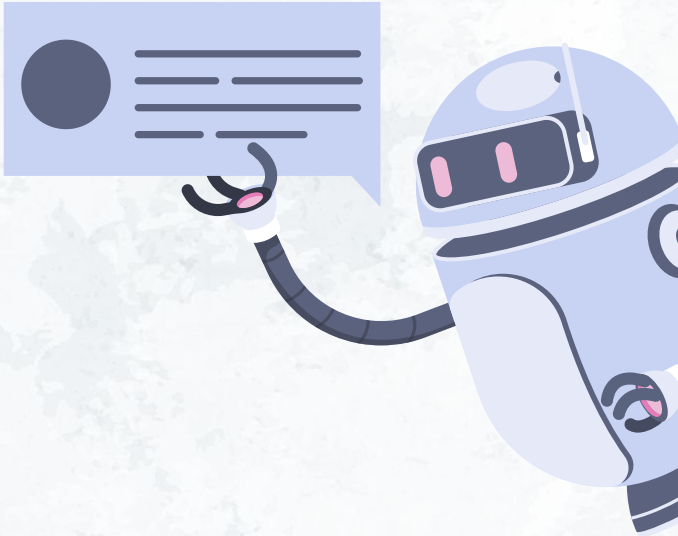
07 → About Model

01 →

Goal of the challenge?

(AI)

Develop an AI/ML system to automate entity identification, verification, and risk scoring from transaction data, reducing manual efforts and enhancing accuracy.



Key Objectives:

- Extract and enrich entity data from multiple sources
- Detect fraudulent or high-risk entities
- Classify entities and assign risk scores.
- Provide evidence and confidence scores for analysis.

02 →

Overview of the Technologies

Tech Stack

Frontend:

HTML, CSS, JavaScript

Backend:

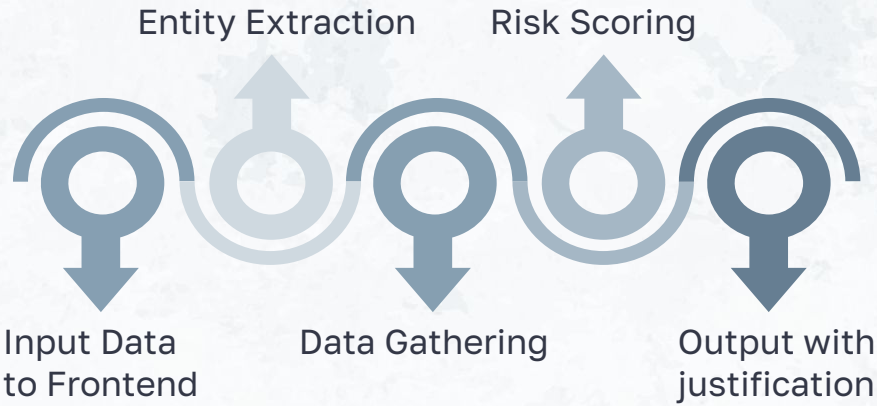
Python - DDGS, Langchain, getpass, pandas
googlesearch, load_dotenv

03 →

Workflow

Flow Diagram

The diagram below illustrates the step-by-step process of our ML application.



04 →

Intelligent Data Extraction

Intelligent Data Extraction

Our system leverages AI-powered semantic search to enhance risk detection beyond simple keyword matching.

How Semantic Search Improves Risk Analysis:

🚀 *Understands Context* – Identifies risks even if exact terms like fraud or lawsuit aren't explicitly mentioned.

🔎 *Deep Data Exploration* – Analyzes Wikipedia & Google data for hidden regulatory, financial, and reputational risks.

📊 *Intelligent Pattern Recognition* – Detects compliance violations, financial instability, and reputational threats using contextual insights.

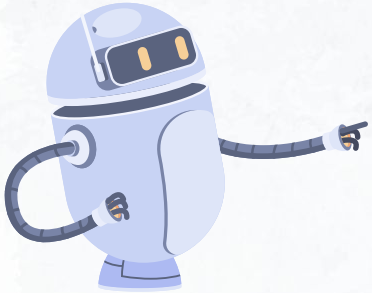
By using semantic search, our system ensures accurate, context-aware risk evaluation for better decision-making.

05 →

Data Sources

Our Data Sources

- OFAC SDN List - Using publicly available .csv files
- SEC Edgar data - using publicly available bulk zip files
- Google searches
- Wikipedia



06 →

Risk Scoring Criteria

Risk Score Calculation 🚦

Our system evaluates entities based on multiple risk factors and assigns a final risk score to assess potential risks.

Key Risk Factors & Scoring:

- Sanctions Risk: 50 (Both sanctioned) | 30 (One sanctioned) | 0 (None)
- Regulatory Risk: 7 → HIGH | 3 → MEDIUM | 1 → LOW
- Financial Risk: 7 → HIGH | 3 → MEDIUM | 1 → LOW
- Reputation Risk: 7 → HIGH | 3 → MEDIUM | 1 → LOW

Output Includes:

✔ Sender & Receiver details

✔ Final Risk Score based on combined factors

✔ Conclusion for informed decision-making

This structured scoring helps in accurate risk assessment while maintaining clarity and efficiency.

07 →

About Model

LLM

Our system leverages Llama 3.2 Vision, an open-source LLM developed by Meta, to enhance risk assessment through advanced AI techniques.

Why Llama 3.2 Vision?

🧠 *Context-Aware Analysis* – Detects implicit risks beyond simple keyword searches.

🎯 *Accurate Entity Recognition* – Provides precise entity extraction and risk classification.

🌍 *Open-Source & Scalable* – Ensures flexibility for integration and future improvements.

By integrating Llama 3.2 Vision, our system achieves smarter, more efficient risk evaluation with AI-driven insights.

Thanks!

Any questions?