~~VIT~~ CAMPUS CONNECT

CYBER SIMULATION EXERCISE – Automating File Cleansing and Analysis leveraging ~~AI~~

September 5, 2025

Automating File Cleansing and ~~Analysis~~

Introduction To Case Study

Automating File Cleansing and Analysis

Background

Security Consultants often receive client data in various formats, including spreadsheets, text files, PDFs, images (such as scanned documents or screenshots), and presentations. These files usually contain client-specific details or sensitive information that must be cleansed before they can be used for analysis.

~~Problem Statement~~

The challenge is to design an automated solution that can:

- **~~Cleanse~~ files** by removing or masking client logos, names, and any ~~Personally identifiable information~~ (PII)* so that files cannot be traced back to the client
- **~~Pre-process~~ diverse file formats** into a consistent, usable structure
- **~~Analyse~~ the processed data** to extract and generate meaningful insights for the Security Consultants

This ensures consultants can work with clean, standardized, and anonymized data without exposing sensitive client information.

Note: *A zipped file with diverse file formats would be provided for reference and testing the prototype*

*PII refers to any information that can be used to directly or indirectly identify an individual such as name, address, contact details, ~~Social Security~~ Number (~~SSN~~) or any other government-issued identification numbers.

Expected Outcomes

Output Deliverables

Solution Design Walkthrough*

Walkthrough of the application functional design, highlighting:

Files cleansing workflow – Removing or masking sensitive client information (e.g., client name, client logo, PII).

File analysis workflow – Automating the reading and analysis of files to extract useful information for further evaluation. This includes but is not limited to:

- **Text extraction:** Applying OCR and other relevant parsing methods to read text from images, diagrams, Tables, PowerPoint slides and scanned pdf files (.jpeg, .png, .pptx, .xlsx, .pdf)
- **Content interpretation:** Identifying key data elements within the extracted text, such as IAM policy statements, firewall rule entries, or IDS/IPS log snippets
- **Preparation for evaluation:** Generating cleansed and readable text in a standardized format (*please populate the outcome in the table within shared PowerPoint template*)

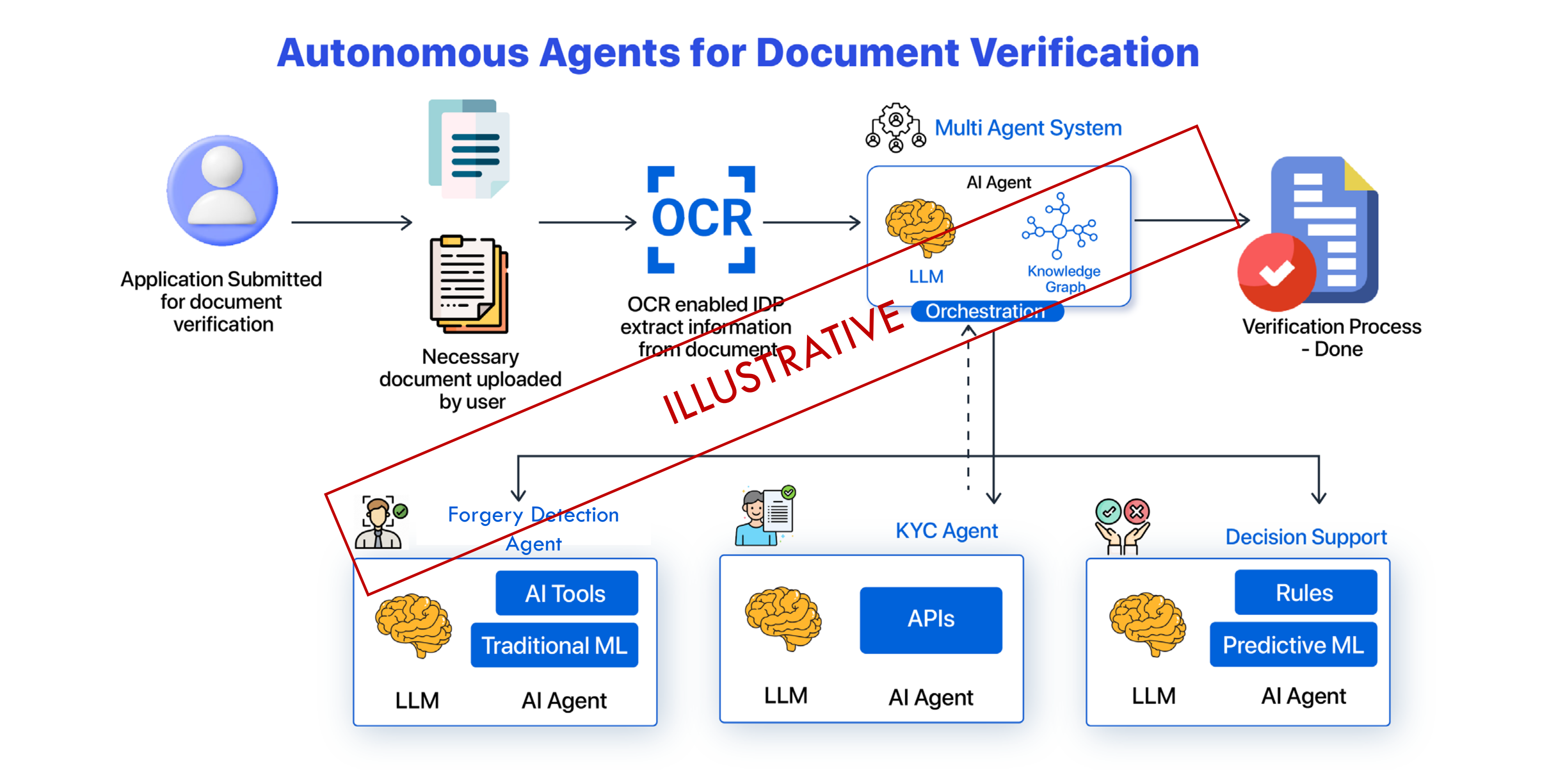
A working prototype:

- A simple UI that allows users to upload files for cleansing and automated analysis
- If UI development is not feasible due to time constraints, demonstrate the backend functionality using an IDE (Integrated Development Environment) of your choice (e.g., Jupyter Notebook, PyCharm, etc.)

**Students are required to leverage the provided PowerPoint Template file to present their solution*

~~Sample Functional Design Diagram~~

Illustrative Purpose Only: The diagram below is for reference and not specific to the case study.



Autonomous Agents for Document Verification
Application Submitted for document verification
Necessary document uploaded by user
OCR
OCR enabled IDP extract information from document
Multi Agent System
AI Agent
LLM
Knowledge Graph
Orchestration
Verification Process - Done
ILLUSTRATIVE
Forgery Detection Agent
AI Tools
Traditional ML
LLM
AI Agent
KYC Agent
APIs
LLM
AI Agent
Decision Support
Rules
Predictive ML
LLM
AI Agent

Thank you

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