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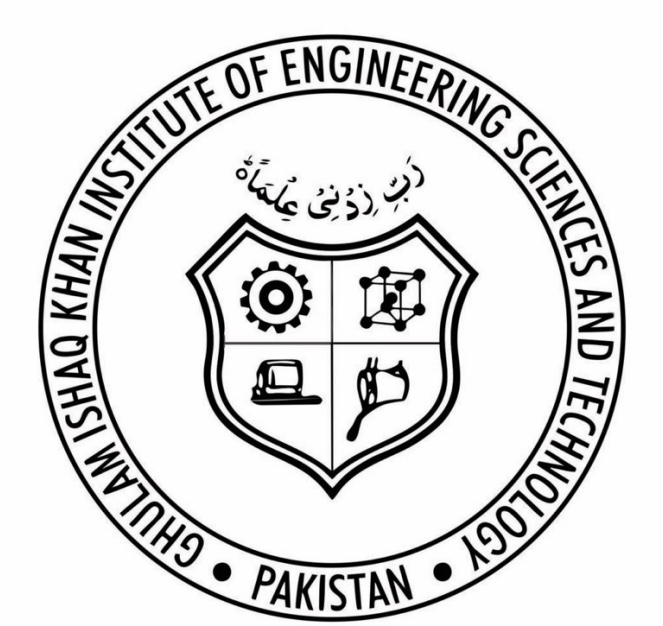

Secure Software Development and Engineering – CY-321

Project Proposal: AI-Driven Identity Verification & Document Validation

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Submitted to:

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Title: AI-Driven Identity Verification & Document Validation

Introduction:

With the increasing reliance on digital services, identity verification is critical for ensuring authenticity in online transactions. This project aims to develop an **AI-driven identity verification system** that detects forged documents, extracts relevant information, and ensures live user verification through facial recognition.

Problem Statement:

Fraudulent identity documents are a major security risk in financial institutions, government eservices, and online businesses. Traditional verification methods are either manual, timeconsuming, or vulnerable to sophisticated forgeries. Our solution automates this process, enhancing both **security and efficiency.**

Proposed Solution:

Our system will allow users to upload identity documents (e.g., passport, driver's license, or national ID). The AI model will then:

1. **Detect Manipulation & Forgery:** Identify if the document has been altered using deep learning models.
2. **OCR-Based Data Extraction:** Extract key details (Name, DOB, ID number) and crosscheck against an existing database.
3. **Live Face Recognition:** Ensure the uploaded document belongs to the actual user via realtime face matching.

Security Requirements & Planning:

The following measures will be implemented:

- **Secure Data Storage:** All sensitive information will be encrypted before being stored.
- **Anti-Tampering Checks:** AI models will be trained to detect manipulated documents.
- **Multi-Factor Authentication (MFA):** Users must pass multiple verification steps.
- **Access Control:** Role-based access management for administrators and users.
- **Secure APIs:** Encrypted API endpoints to prevent data breaches.

Expected Impact:

Our proposed system acts as a prevention tool against identity fraud since it delivers a protected automated solution which uses AI to verify user identities across multiple business sectors. It will boost security standards through automated processes as well as improve both onboarding efficiency and regulatory compliance for high-risk industries and sectors.

Key Benefits:

This system implements fraud prevention measures to recognize document forgery and stop impersonation attempts which enable only authentic users to access the system.

The system performs automated identity authentication which removes the need for manual verification procedures and speeds up the authentication process.

The system features AI-operated deep learning models that provide highly accurate tamperevidence verification.

Industries & Use Cases:

1. Banking & Finance

- Secure Customer Onboarding executes document authenticity checks as a prerequisite for new bank account creation.
- The digital loan processing system verifies applicants show they are real individuals and have authentic identities.

2. Government Services

- e-Government Portals: Verifies citizens for tax filing, social security, and other digital services.
- Secure travel permission is enabled through border control services which verify passport authenticity.
- Voter Registration & Verification: Prevents identity fraud in elections.

3. Legal & Compliance

- Legal Document Authentication confirms that all contracts with affidavits and power of attorney documents derive from authorized individuals.
- A system called Notary & e-Signature Verification conducts identity debugging to stop fraudulent agreements.
- The system performs automated background checks on businesses for various regulatory submissions and license requirements.

References:

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2. [Sri Kanth Mandru]. (2022). *How AI Can Improve Identity Verification and Access Control Processes*. ResearchGate. https://www.researchgate.net/publication/382585091_How_AI_can_improve_identity_verification_and_access_control_processes
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