**Assignment Instructions: AI in Fraud Detection Case Study**

**Overview**

This group assignment requires you to research a real-world case of artificial intelligence (AI) used for fraud detection within a financial institution. Your task is to create a comprehensive case study report that explores the technology employed, the benefits realized, and the challenges encountered. This assignment will help you understand the practical applications of AI in the financial sector and the complexities involved in its implementation.

Submission Details

* **File Naming Convention**: A04\_group\_submittername\_ITAI 2372
* **Submission Format**: PDF or Word Document
* **Deadline**:Nov 01st

Assignment Components

1. **Introduction**
   * Briefly introduce the financial institution and the context in which AI is used for fraud detection.
   * Explain the importance of AI in combating fraud within financial services.
2. **Technology Overview**
   * Describe the specific AI technologies and tools utilized in the case study.
   * Explain how these technologies work to detect fraudulent activities.
3. **Benefits**
   * Detail the benefits that the financial institution has gained from implementing AI for fraud detection.
   * Include quantitative data if available (e.g., reduction in fraud incidents, cost savings).
4. **Challenges**
   * Discuss any challenges or limitations faced by the institution in implementing AI for fraud detection.
   * Consider technical, ethical, and operational challenges.
5. **Conclusion**
   * Summarize key findings from your research.
   * Provide insights or recommendations for other institutions considering similar implementations.
6. **References**
   * Cite all sources of information using APA format.

Group Collaboration

* Each group member should contribute equally to research, writing, and editing.
* Assign specific sections to each member to ensure balanced participation.
* Schedule regular group meetings to discuss progress and integrate individual contributions into a cohesive report.

Evaluation Criteria

Your submission will be evaluated based on the following criteria:

* **Comprehensiveness**: Coverage of all required components.
* **Clarity and Organization**: Logical flow and clear presentation of information.
* **Depth of Analysis**: Insightfulness and depth in discussing technology, benefits, and challenges.
* **Research Quality**: Use of credible sources and proper citation.
* **Collaboration**: Evidence of equal participation from all group members.

Additional Notes

* Ensure your report is free of grammatical errors and typos.
* Use visuals such as charts or graphs where appropriate to enhance understanding.
* Seek feedback from peers or instructors if needed before final submission.

By completing this assignment, you will gain valuable insights into how AI is transforming fraud detection processes in financial institutions and develop skills in collaborative research and reporting.

**Resources**

To research and find cases for your assignment on AI used for fraud detection in financial institutions, consider exploring the following sites and resources:

1. **AI.Business**: This site provides detailed case studies, such as the one on Danske Bank's use of AI to enhance fraud detection. It offers insights into how AI models are implemented to improve detection rates and reduce false positives.
2. **DigitalDefynd**: This site features multiple case studies on AI applications in finance, including those focused on fraud detection. It covers various financial institutions and their strategies for integrating AI to combat fraud.
3. **KnE Social Sciences**: This journal article presents a systematic literature review of AI methodologies in financial fraud detection, offering a comprehensive overview of the technologies and their effectiveness across different industries, including finance
4. **Nature.com**: This source provides a literature review on financial fraud detection through machine learning techniques, discussing trends, datasets, and performance metrics used in fraud detection
5. **Cognizant**: This case study details how a global bank partnered with Cognizant to use AI and machine learning for check fraud detection, showcasing practical applications and outcomesThese resources should provide a solid foundation for researching real-world applications of AI in fraud detection within financial institutions.

* [File Upload](https://eagleonline.hccs.edu/courses/267108/assignments/6555090#submit_online_upload_form)
* [Dropbox](https://eagleonline.hccs.edu/courses/267108/assignments/6555090#submit_from_external_tool_form_2420)
* [Microsoft OneDrive](https://eagleonline.hccs.edu/courses/267108/assignments/6555090#submit_from_external_tool_form_83229)

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AI Fraud Detection Case Study

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As one of the largest financial institutions in the U.S., Bank of America faces a growing challenge in preventing fraud across its large customer base. With millions of transactions daily, across various platforms, the financial institution has seen an increase in fraudulent activities, including unauthorized transactions, phishing schemes, and account takeovers. To counter these threats, the company has begun implementing AI, shifting from basic rule-based systems to more complex data-driven systems. By using machine learning algorithms, the bank can monitor transaction history, location, spending habits, and user device information, which can in turn identify patterns associated with the customer or unusual activity. Additionally, this can lead to predictive analysis, allowing the company to flag and report any potentially suspicious actions possibly even before they are completed. These AI models, including neural networks, detect complex patterns within the large datasets, offering a level of detail and adaptability that past systems could achieve.

References:

<https://emerj.com/ai-sector-overviews/ai-at-bank-of-america/>