

An approach to integrate generative artificial intelligence into automated credit decision-making processes

Abstract

The presentation aims to illustrate the synergy between an automatic decision-making system in banking and generative artificial intelligence. Specifically, it explores the integration of an automatic credit decision system (ACDS) and generative AI. The ACDS quantitatively assesses borrowers' creditworthiness, producing judgments on whether to approve, reject, or further investigate credit applications. It also provides additional information such as profitability, debt sustainability, and potential fraud.

This quantitative data is transmitted to Experian's Retrieval Augmented Generation (RAG) system, which integrates public and corporate regulatory documents. The RAG system enhances the interpretability of ACDS outcomes and aligns with evolving regulatory norms. It is periodically trained with anonymized examples of banking operations. It provides a binary outcome to confirm or rectify ACDS's response and a summary of key decision elements in tabular form.

The RAG ensures decisions are consistent with internal and public regulations, addressing fairness, privacy, and non-discrimination areas. It maintains explainability and auditability in compliance with frameworks like GDPR, the AI Act, and banking supervision guidelines. The integration of GenAI via RAG introduces a dynamic mechanism for alignment with evolving regulatory norms and contextual patterns, which static rule-based systems cannot achieve.

The presentation also addresses managing possible hallucinations of the RAG. It leverages retrieval from structured, versioned knowledge bases to ensure source traceability and minimize reliance on purely generative content. Illustrative examples are included to complete the presentation. Future extensions may explore a feedback mechanism whereby insights from RAG could inform feature engineering or rule adjustments within ACDS, fostering a more adaptive and resilient decision-making ecosystem.

Overall, the integration of ACDS and RAG offers a comprehensive approach to credit decision-making, ensuring that decisions are not only data-driven but also compliant with regulatory standards and adaptable to changing contexts. This synergy aims to improve credit decisions' accuracy, transparency, and fairness in the banking sector.

By integrating ACDS with RAG, banks can ensure their credit decision-making processes are robust, transparent, and aligned with regulatory requirements. This integration enhances the interpretability of decisions and introduces a dynamic mechanism for continuous improvement and adaptation to evolving regulatory norms and market conditions. The presentation includes a section dedicated to managing possible hallucinations of the RAG, ensuring that the system's outputs are reliable and based on verified sources. Illustrative examples are provided to demonstrate the practical application and benefits of this integrated approach.

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