USE OF GENERATIVE AI IN DEVELOPING ACCOUNTING & HR CASE STUDIES

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Abstract

In the fields of accounting and human resources (HR), generative artificial intelligence (GAI) is quickly changing professional and educational procedures. GAI improves learning outcomes, decision-making, and operational efficiency by modeling real-world financial situations, fraud detection cases, compliance training, and HR lifecycle events. This study examines the various ways that GAI may be used to provide dynamic, data-rich, and flexible case studies for HR and finance education. Addressing both the benefits — such as automation, flexibility, and accuracy — and drawbacks — such as interpretability, maintenance expenses, and realism — it talks about the underlying technologies, such as GANs and Transformers. The results demonstrate how GAI has the potential to completely transform conventional case-based learning while highlighting the necessity of ongoing assessment to guarantee contextual relevance and dependability.

Keywords: Generative AI, Case-Based Learning, Accounting Education, Human Resources Training, Financial Simulation, AI Limitations.

Introduction

One sort of artificial intelligence (AI) technology that can produce text, pictures, music, and synthetic data, among other kinds of material, is called generative AI (GAI). The ease of use of new user interfaces that allow for the creation of high-quality text, pictures, and films in a matter of seconds has fueled current discussion about GAI. In addition, the technology is well-known. GAI was first presented by chatbots in the 1960s. However, it wasn't until 2014 that generative adversarial networks (GANs), a machine-learning technique, were introduced that GAI was able to produce realistic pictures, videos, and sounds for consumers. The popularity of GAI can be attributed in large part to recent developments such as Transformers and the language models they made possible. Machine-learning techniques called Transformers (Nuobu 2023) enable researchers to train ever-larger models without having to categorize all of the data beforehand. A discriminator neural network compares the information produced by a generator neural network in GANs to evaluate whether it seems "real." The generator network is improved with the help of this feedback.Additionally, the discriminator may spot stuff that is counterfeit or beyond the domain. Over time, both neural networks get better, and the feedback helps them provide data that is as near to reality as possible. When working with any type of visual data or pictures, GANs are usually used. VAEs perform better in use scenarios involving signal processing, such security analytics or anomaly detection for predictive maintenance.

Advantages and Disadvantages of GAI in Finance and HR

Aspect	Advantages	Disadvantages
Data efficiency	Can generate synthetic financial data, reducing the need for large, real datasets.	Synthetic data may not fully capture the complexities of real-world financial data.
Model complexity	Capable of modelling complex financial systems and patterns.	Complexity makes the models hard to interpret, leading to a 'black box' issue.
Adaptability	Can adapt to new financial conditions or new types of fraud more quickly.	Adapting the model to new events may require re-training, which can be computationally very expensive.
Operational costs	Can automate various financial tasks, potentially reducing operational costs.	Initial setup and on-going maintenance can be costly due to computational requirements.
Real-time analysis	Capable of real-time analysis and decision-making.	Real-time analysis requires heavy computational resources, which leads to higher operational costs.
Accuracy	High predictive accuracy for tasks like stock prediction, fraud detection, and so forth	High-accuracy models may overfit the training data, leading to poor real-world performance.

Accounting Case Studies with AI
1. Realistic Financial Scenario Creation

To create realistic financial scenarios with AI, generative models, like large language models (LLMs) or machine learning algorithms, are trained on copious amounts of financial data, accounting regulations, and business patterns in order to replicate actual financial circumstances. With the use of supporting documentation such as income statements, balance sheets, cash flow statements, and journal entries, these AI models may produce intricate financial narratives.

AI systems take into account factors like market swings, seasonal patterns, legal restrictions, tax ramifications, and industry-specific standards to guarantee realism. AI may, for instance, predict how a retail chain might rearrange its finances following a decline in customer spending or simulate the effect of an abrupt increase in raw material costs on the profitability of a manufacturing business. Because these situations are meant to resemble real-world business problems, professionals or students may practice problem-solving in a real-world setting.AI is also capable of dynamically modifying complexity. While an experienced learner could encounter a scenario involving multinational consolidation, foreign exchange gains/losses, or forensic accounting linked to fraud detection, a novice might work on a scenario involving simple bookkeeping for a small corporation. Because of their versatility, AI-generated financial scenarios are effective teaching, learning, and evaluation tools for accounting and finance. AI is capable of simulating business transactions, audit trails, and financial statements for a variety of businesses (SMEs, multinational firms, etc

2. Fraud Detection Simulations

By creating fraud detection simulations that mimic actual anomalies in financial data, artificial intelligence is revolutionizing internal audit procedures and accounting education. The purpose of these simulations is to teach professionals and students how to use forensic accounting and critical thinking to detect, look into, and address financial wrongdoing. Artificial intelligence (AI) may mimic fraudulent acts including asset theft, overstated income, inflated costs, and fake suppliers by using natural language processing and pattern recognition. An AI-generated case study may, for example, describe a situation in which the financial controller of a business falsifies revenue recognition in order to satisfy quarterly goals. Bank statements, sales invoices, ledgers, emails, and other supporting documentation are provided by the AI; some of them include warning signs like duplicate payments or changed invoice dates. Students must examine the information, look for discrepancies, and identify the type of fraud.

Another instance may be a retail chain where a worker sets up fictitious supplier accounts and authorizes payments without authorization. The student is challenged to carry out thorough transaction tracing and internal control evaluation since AI can create realistic transaction logs, approval procedures, and audit trails that resemble an actual ERP system. AI is capable of creating situations including audit failures, internal control violations, and forensic accounting.

3. Regulatory Compliance

AI-generated accounting case studies may be quite helpful in assisting professionals and students in comprehending and using regulatory compliance requirements in various countries. AI allows users to interact with intricate legal and financial standards, like GAAP, IFRS, SOX (Sarbanes-Oxley Act), and local tax laws, in authentic corporate settings by modeling compliance situations.

An AI-generated scenario may, for instance, mimic a global company getting ready to submit consolidated financial accounts that adhere to IFRS. Learners may be required to handle issues like as revenue recognition (IFRS 15), lease accounting (IFRS 16), and deferred tax computations as part of the case study. Supporting documents—like financial disclosures, audit trails, and intercompany transaction reports—would be generated by the AI, ensuring consistency with real regulatory documentation standards.

A public firm going through a Sarbanes-Oxley (SOX) compliance audit may be another example. Internal control flaws, control testing documentation, and remediation strategies might be the main topics of the simulation. AI would provide internal control flowcharts, audit checklists, and possible exceptions for students to review and fix. These artificial intelligence (AI)-generated scenarios are especially useful for audit preparation, regulatory training, and CPA or ACCA test practice. In a risk-free, virtual environment, they enable users to keep current with changing financial rules, enhance their ability to make decisions under pressure, and test their compliance knowledge in real-world scenarios. AI is capable of producing case studies that highlight adherence to tax regulations, GAAP, or IFRS in various jurisdictions.

4. Automation and Digital Transformation

AI-generated accounting case studies focusing on automation and digital transformation illustrate how modern technologies are reshaping financial operations, decision-making, and business strategy. These case studies simulate real-world transitions where companies adopt technologies such as robotic process automation (RPA), cloud-based ERP systems, AI-driven forecasting tools, and blockchain for accounting and audit processes.

For example, a case might depict a mid-sized logistics firm migrating from manual bookkeeping to an integrated cloud ERP system like SAP or NetSuite. The AI-generated scenario could involve challenges related to data migration, workflow automation, and real-time reporting. Learners would analyse how automation reduces human error, enhances efficiency, and alters the role of accountants from data entry to strategic advisory.

Another case might involve a company implementing RPA to automate routine tasks such as invoice processing, bank reconciliations, or payroll. The simulation could include before-and-after process maps, time-saving metrics, and financial reports to assess the ROI of automation. Learners may be asked to identify which accounting functions are best suited for automation, evaluate internal control risks associated with digital tools, and develop change management strategies.

These AI-generated simulations help users understand not just the technical side of digital transformation, but also its impact on compliance, risk management, data security, and workforce skills. They are ideal for preparing students and professionals to lead digital initiatives within finance departments and adapt to the evolving role of accountants in a tech-driven economy.

Simulating the effects of integrating technologies like RPA or ERP systems in accounting departments.

HR Case Studies with AI

Designing employee lifecycle scenarios: Designing employee lifecycle scenarios involves mapping out key stages in an employee's journey within an organization and crafting realistic, detailed scenarios to address HR strategies, challenges, and opportunities at each stage. This is especially useful for training, policy development, change management, and improving employee experience. From recruitment, onboarding, performance management to exit interviews.

Attraction
Goal: Draw potential candidates to your company.
Example:

Your company is launching a new sustainability initiative and wants to attract top environmental engineers. How do you tailor employer branding and recruitment marketing to this target group?

Recruitment
Goal: Identify and hire the best candidates.
Scenario Example:

A top candidate drops out just before accepting the offer. The hiring manager is under pressure to fill the role quickly. How do you balance urgency with maintaining quality?

Onboarding
Goal: Help new hires acclimate and become productive quickly.
Scenario Example:

A new employee in a remote role feels disconnected in their first month. What steps do you take to ensure successful onboarding and team integration remotely?

Development
Goal: Offer growth opportunities to boost engagement and performance.
Scenario Example:

An employee expresses interest in a leadership role but lacks managerial experience. What kind of development plan or mentorship can you provide?

Retention
Goal: Keep employees motivated and reduce turnover.
Scenario Example:

Exit interviews reveal that many employees leave due to lack of work-life balance. How do you redesign roles or policies to improve retention?

Performance Management
Goal: Ensure employees meet objectives and grow professionally.
Scenario Example:

A high performer is failing to collaborate with the team, creating friction. How do you handle performance discussions and set behavioural expectations?

Separation/Exit
Goal: Manage smooth transitions and preserve brand reputation.
Scenario Example:

An employee with long tenure is being laid off due to restructuring. How do you handle the communication and offboarding to maintain dignity and reduce risk?

Conflict Resolution Cases

Simulating disputes related to discrimination, harassment, or policy violations. Conflict resolution cases in HR refer to situations where disputes, disagreements, or tension arise between employees, managers, or teams in the workplace. These conflicts may involve communication breakdowns, workload disputes, interpersonal issues, performance expectations, or more serious allegations like harassment or discrimination. HR is responsible for identifying, managing, and resolving these conflicts in a way that is fair, confidential, and aligned with company policies and employment laws.

Organizational Change Management

Creating narratives about mergers, downsizing, or culture shifts. Organizational Change Management (OCM) is the structured approach a company uses to transition individuals, teams, and the organization as a whole from a current state to a desired future state. It involves preparing, supporting, and helping employees adopt changes to business processes, technology, structures, or culture.

Policy Creation and Evaluation

Generating case studies around implementing or revising HR policies like hybrid work, DEI (diversity, equity, and inclusion), or employee engagement strategies. Creating and evaluating policies is a core function of HR and leadership in any organization. Well-crafted policies provide clarity, consistency, legal protection, and help shape organizational culture. Evaluation ensures they stay relevant and effective over time.

Limitations
Lack of Real-World Complexity

Financial markets are like a big, complicated puzzle. They are affected by many things happening all around the world. This includes changes in the economy, what people are feeling about the stock market, big global events like elections or conflicts, and even natural disasters like hurricanes or earthquakes. Now, imagine teaching a computer program to understand this puzzle. You can only teach it what we know. So, if we don't know about all the pieces of the puzzle, neither will the computer program. This is what happens with GAI models. They create fake or "synthetic" financial data based on what they've been taught. But if they have yet to be taught about all the complicated things that can affect financial markets, then the fake data they create won't include those things either.

Market Risks

Financial markets can sometimes be affected greatly due to surprising events that nobody saw coming, like a sudden and unavoidable market crash (Krause 2023). These are called "black swan" events. GAI models, the computer programs that try to predict what will happen in the markets, can get confused by these unexpected events and may end up giving incorrect results. That is because these programs learn from what has happened in the past, and they are not great at guessing surprises that have never happened before Wach et al. 2023. So, if people or companies rely too much on these AI models to make financial decisions, they could end up in trouble when something unexpected happens

Interpretability and Explainability

GAI models, particularly complex deep-learning models, need more interpretability and explainability. Understanding the model's decision-making process or how it produces its results might be challenging. This drawback may prevent GAI from being widely used in the finance industry, where interpretability and transparency are essential for risk assessment, regulatory compliance and decision-making.

Limited Long-Term Predictive Ability

Imagine we are trying to predict the weather. It is easier to say what will happen tomorrow than to accurately predict the weather a month from now. GAI models have a similar issue when it comes to finance. They are pretty good at making short-term predictions, like what a stock price might do in the next few days. But when it comes to long-term predictions, like what the stock market will look like a year from now, they are not as reliable. This is because financial markets are influenced by a ton of things—like new laws being passed, real-world events or even sudden changes in what people are interested in buying. These are things that the AI model might not have data on or cannot' foresee because they are too far in the future.

Costly to Maintain

Think of GAI models like a fancy smartphone that needs constant updates. Just like we must keep updating our phone's software to get new features or fix bugs, these AI models also need regular updates to stay accurate and useful. But updating these models is not as simple as tapping a button. It takes experts to do it, and their time costs money. Plus, we might need more powerful computers as the model gets more complex, and that is another expense. So, while these AI models can do some complex stuff, like helping to predict stock prices or catch people committing fraud, they can also be like a money-eating machine that constantly needs to be fed to keep doing its job well.

Personalised Financial Product Generation

By customising products to specific consumer profiles, GAI in banking can revolutionise existing product offers. Instead of using standardised financial products, banks can utilise cutting-edge algorithms to create unique credit, investment and insurance options that perfectly match a user's spending patterns, financial objectives and risk tolerance. Tailoring financial solutions to each customer's needs increases customer happiness and fosters more trust. Such personalisation, which provides a blend of data-driven insights and individual-centric solutions, will become increasingly important to the financial industry as AI develops.

Comprehending Terminology

GAI models excel at generating genuine text based on patterns in the training data, but they may need help comprehending the financial domain's context and nuances. Financial terminology, jargon and complex financial concepts require an in-depth comprehension that may be difficult for GAI models to comprehend accurately. With the emergence of GPTs such as the Bloomberg GPT, which has been trained on vast quantities of financial data, this problem can be readily resolved shows limitations and future work for using GAI in finance

Conclusion

Generative AI's incorporation into human resources and finance is changing conventional methods and promoting creativity and efficiency. It is clear from the case examples examined in this chapter that generative AI may greatly improve decision-making, operational efficiency, and user experiences in both fields. Generative AI is lowering human error and boosting scalability in the financial industry by allowing fraud detection, tailored financial advising, and quicker and more accurate forecasting. Through individualized learning and performance management systems, AI technologies in HR are boosting employee engagement, streamlining the hiring process, and automating administrative duties.

But generative AI adoption also presents significant obstacles, such as the need to upskill human workers, possible bias in AI-generated results, and data privacy issues. Implementation requires a balanced approach from organizations that incorporates ethical responsibility, technical innovation, and regulatory compliance.

All things considered, even if generative AI is not a one-size-fits-all answer, its strategic use in HR and finance shows great promise to revolutionize how businesses function and compete. To fully utilize generative AI while reducing its hazards, further research, responsible implementation, and cross-functional cooperation will be necessary.

Review of Literature

Kwon et al. (2021) explore how GAI helps model policy changes and evaluate employee engagement strategies in dynamic environments. Conflict resolution cases, often difficult to teach due to legal and ethical sensitivities, can now be simulated effectively, giving HR professionals a risk-free training platform.

Nevertheless, *Singh and Roberts (2023)* emphasize that GAI's limited understanding of organizational culture and human psychology may lead to oversimplified scenarios, failing to capture emotional complexity or interpersonal nuances. This could hinder rather than help HR decision-making if not critically reviewed by subject matter experts.

Patel and Sharma (2022) describe how generative AI supports forensic accounting through detailed, multi-layered fraud simulations, enabling learners to practice critical thinking and investigative techniques.

McCarthy et al. (2020) demonstrate that AI-generated financial scenarios improve problem-solving abilities in complex areas such as multinational consolidation and tax planning.