

Generative AI in FinTech

From Transactional Data to
Personalized Financial Experiences

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Agenda

- ▶ Introduction – Why Generative AI matters in FinTech
- ▶ Evolution of AI in Financial Services
- ▶ Generative AI in Action – Narratives, Personalization, Risk
- ▶ Challenges and Considerations – Bias, Privacy, Explainability
- ▶ Privacy-Preserving Approaches – Federated Learning, Differential Privacy, XAI
- ▶ The Road Ahead – Autonomous Finance, CBDCs, Decentralized Trust
- ▶ Case Study Snapshot – Personalized Wealth Management Assistant
- ▶ Key Takeaways & Conclusion – Balancing Innovation and Responsibility

Why Generative AI matters in FinTech

- ▶ Finance has always been built on data.
- ▶ We are moving from static transactions → dynamic experiences.
- ▶ Generative AI is redefining engagement, risk management, and trust.

The Evolution of AI in FinTech

- ▶ Rule-based systems → Fraud detection, credit scoring (1990s–2000s)
- ▶ Machine Learning → Risk scoring, personalization (2010s)
- ▶ Deep Learning → Real-time fraud, NLP chatbots (late 2010s)
- ▶ Generative AI → Personalized experiences, synthetic data, autonomous finance (2020s)

What is Generative AI in Finance?

- ▶ Not just predicting outcomes, but creating insights and actions.
- ▶ Personalized financial reports from raw data.
- ▶ Generating risk scenarios and stress tests.
- ▶ Custom financial product offerings.

From Transactions to Narratives

- ▶ Every customer leaves a data trail of spending, saving, investing.
- ▶ Generative AI can convert data into contextual stories.
- ▶ Highlight behavioral trends, risks, and opportunities.
- ▶ Example: 'Your dining spend increased 18%, impacting savings goals.'

Hyper-Personalization in Action

- ▶ Traditional: Generic dashboards, one-size-fits-all offers.
- ▶ Generative AI: Conversational assistants, tailored loan terms.
- ▶ Dynamic investment recommendations.
- ▶ Banking that feels human and adaptive.

Risk & Fraud Intelligence

- ▶ Generate synthetic fraud patterns for training.
- ▶ Simulate adversarial attacks before they occur.
- ▶ Create stress-test scenarios for liquidity and credit risks.
- ▶ Result: Stronger, future-proof defenses.

Challenges of Generative AI in Finance

- ▶ Bias & Fairness – Avoid reinforcing inequalities.
- ▶ Data Privacy – GDPR, CCPA, banking secrecy.
- ▶ Explainability – Transparency demanded by regulators.
- ▶ Security – Vulnerability to data poisoning and adversarial inputs.

Privacy-Preserving Generative AI

- ▶ Federated Learning → Train across banks without raw data.
- ▶ Differential Privacy → Protect sensitive information.
- ▶ Explainable AI (XAI) → Build trust with regulators and customers.

The Road Ahead: Autonomous Finance

- ▶ Generative AI + Multi-Agent Systems → self-optimizing agents.
- ▶ Personal finance copilots for individuals.
- ▶ Global-scale financial simulations.
- ▶ Finance that is adaptive, resilient, inclusive.

Case Study Snapshot



- ▶ Personalized Wealth Management Assistant.
- ▶ Inputs: Customer spending, saving, investment behavior.
- ▶ Outputs: Tailored projections, tax optimization strategies.
- ▶ Impact: Engagement up 40%, literacy improved.

Key Takeaways

- ▶ Generative AI is moving finance from data → experiences.
- ▶ It powers hyper-personalization, fraud intelligence, compliance.
- ▶ Success requires trustworthy, explainable, privacy-preserving AI.
- ▶ Future: Autonomous finance with multi-agent collaboration.

Closing Quote

- ▶ "Generative AI is not just transforming finance—it is humanizing it, turning cold transactions into meaningful journeys."