Technological Transformation in Financial Services:
Managing through AI, fintech partnerships and other third-party relationships

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Technological Transformation in Financial Services

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Technological Transformation Highlights

▶ Digital Transformation with online banking and mobile phone applications

▶ Customer service automation and chatbot assistance

▶ New financial institution industry with fintechs and payment systems beyond traditional banking

▶ Various technology platforms and software options, cloud storage, data warehouses and data reporting

▶ Crypto assets

▶ Other distributed ledger (blockchain) technology applications

▶ Non-fungible tokens (NFT's); "tokenization" (i.e. the process of using a digital representation) of assets and securities

▶ Note for lawyers: Chat GPT-4 passed the bar exam

What is AI?

► AI has become a catchall term for applications that perform complex tasks that once required human input (expert systems such as for diagnosis and forecasting, natural language processing, speech recognition, and machine vision beyond just inspection and control)

► The term is often used interchangeably with its sub-fields, including machine learning and deep learning

► Machine learning is focused on building systems that learn or improve their performance based on the data they consume, sometimes with little human interaction; although all machine learning is AI, not all AI is machine learning

► Deep learning uses layers of algorithms, or artificial neural networks, to mimic the learning process of the human brain

Artificial Intelligence

Machine Learning
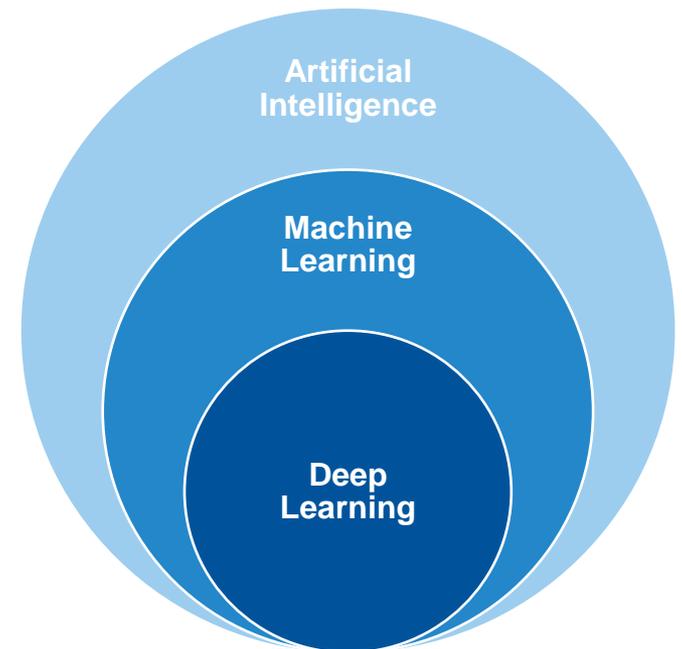
Deep Learning

What is AI? (continued)

► Machine learning can use algorithms to parse data, learn from it, and make a determination or prediction about something in the world

► Deep learning models are an advanced form of machine learning – they tend to increase accuracy with increased amount of training data and can perform multiple simultaneous tasks

► Deep learning has enabled self-driving cars, facial recognition, Alexa, Siri, and natural language chatbots like ChatGPT (*i.e.,* Chat Generative Pre-Trained Transformer)

Artificial Intelligence

Machine Learning
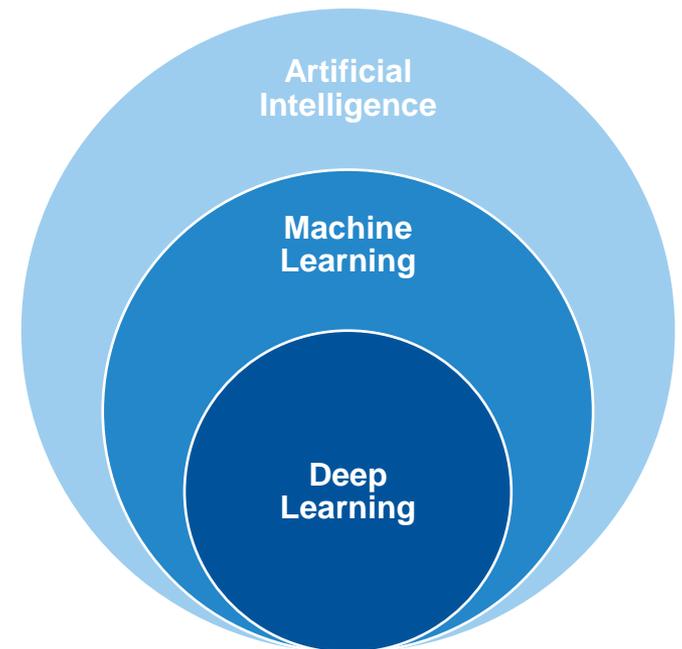
Deep Learning

What is Generative AI and AGI?

▶ The latest evolutions of deep learning models, including "Generative AI" tools, can generate:

    ▷ **text** (*e.g.*, OpenAI's GPT, Google's PaLM, Meta's LLaMa, and Anthropic's Claude large language models, "LLMs"),

    ▷ **code** (*e.g.*, GitHub Copilot and Code Llama),

    ▷ **images** (*e.g.*, DALL-E, Midjourney, Stable Diffusion),

    ▷ and even videos

▶ The size and capabilities of AI models have been advancing incredibly quickly in the past few years.

▶ Artificial General Intelligence ("AGI") is the concept of artificial intelligence models that can accomplish any intellectual task that a human being can perform

    ▷ OpenAI says it is working towards AGI

Artificial Intelligence

Machine Learning

Deep Learning
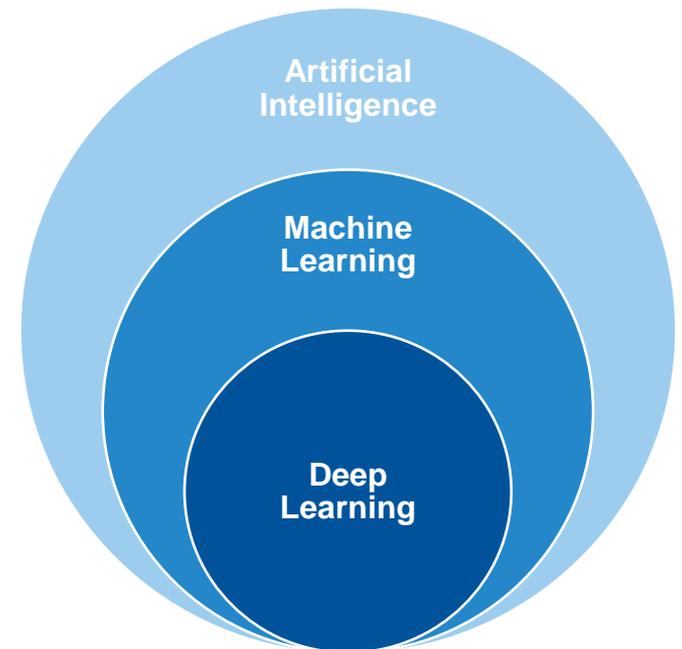
Large Language Models with RAG

► Many large language models are using Retrieval Augmented Generation ("RAG") to specify the information or limit responses to a certain knowledge database

► Minimizes errors and "hallucinations," chatbot improper advice

► For example, Thomson Reuters' Casetext CoCounsel tool uses GPT4 for natural language processing, but uses RAG to limit answers to information in its databases of good case law and other legal research sources (or user-uploaded documents).

► Financial institutions can potentially construct and tailor legal and compliance inventories and governance models with less manual processes

Technology and AI Advances in Financial Services

- ► AI in banking is about efficiency, speed, data, and insights that weren't previously possible, and is considered the future of digital banking

- ► Virtual Financial Assistant Chatbots through 24-hour omnichannel engagements

- ► Credit and loan underwriting algorithms, investing and brokerage advice, insurance modeling

- ► Fraud detection enhancements and reduction in false positives

- ► Automated trading with real-time data and market decisions, pre-defined rules

- ► Risk assessments with predictive analytics and market condition monitoring

- ► Cybersecurity and money laundering protections

- ► Biometrics, monitoring, push notifications in-app AI Predictive Modeling

- ► View of customer financial priorities, spend matters, and held-away activity; relevant product at the right time for personal loans, attrition and delinquency modeling

- ► AI tools unproven and expensive to operate – the most potent AI models require more power and put more strain on computer processing

Governance and Compliance Practices

► Pace of change is significant with new entrants into the marketplace

► Prepare for broad definitions and interpretations of AI-related technology

► Inventory tracking of technology and AI usage, overlapping or inconsistent software

► Evaluate compliance with applicable laws and regulations and critical impacts

► New products committee vetting

► Key AI points of contact and escalation procedures (*i.e.,* designate an AI leader or team to monitor new regulations, trends and technology)

► Need to train workforce, leadership and corporate boards on risks and benefits, primary use cases

► Collaboration across organizational groups with engineers and technology (is it practical?)

► Active human oversight on an individual decision level vs. passive oversight reviewing the overall performance of a system with a holistic view

Governance and Compliance Practices (continued)

- ► Develop compliance policies and protocols (most banks prohibit employee use of ChatGPT on company equipment), including

    - ▷ Employee handbook

    - ▷ IT policy

    - ▷ Code of ethics

    - ▷ Often a separate AI Policy

- ► Supply chain and contract management needs to address specific AI and technology issues, including access to significant volumes of data, and evolution of models and algorithms throughout the life of the contract

- ► AI uses should include risk assessments and audits, including operational and model risk, bias or data privacy concerns

- ► Accountability and Transparency:

    - ▷ Demonstrate a strategy and decision-making process, with risk assessment and mitigation

    - ▷ Can use data protection impact assessments (DPIA's), such as those for compliance with the EU General Data Protection Regulation (GDPR) as a starting point to evaluate AI compliance

    - ▷ Transparency includes the intended use and limitations of the AI model, the design, data training and practices, and outputs or decisions, explaining the rationale but also end user notification when automated decisions are being made

    - ▷ Evaluate and manage safety and security

Legal Issues Overview

► Potential legal issues with technology and AI usage are voluminous and evolving – in addition to inaccuracy and need for human oversight:

▷ Accountability and transparency

▷ Data privacy and confidentiality

▷ Anti-discrimination and fair lending

▷ Intellectual property and copyright protection

▷ Employment

▷ Fraud, safety and security

▷ General ethics

▷ Marketing and advertising

▷ Third party agreements and partnerships

Financial Institution AI Guidance

► Office of Comptroller of the Currency Semi-Annual Risk Perspective, National Risk Committee (Fall 2023) "Special Topics in Emerging Risks-Artificial Intelligence"

► US Department of the Treasury Public Statements (October 2023)

► SEC proposed new rules in July 2023 for broker-dealers and investment advisers regarding technology use

► Chairman Gensler has suggested that an AI-caused financial crisis may be nearly unavoidable in the next decade without further regulation, including stability concerns about institutions relying on the same underlying base model or data aggregator

► Federal Financial Services Agencies' RFI on AI (March 2021): Request for Information and Comment on Financial Institutions' Use of Artificial Intelligence, Including Machine Learning (FRB, OCC, FDIC, NCUA, CFPB)

Consumer Law Impacts and Fair Lending

Significant Consumer Financial Protection Bureau (CFPB) activity and guidance

► CFPB September 19, 2023 (Circular 2023-03) guidance regarding legal requirements lenders must adhere to when using artificial intelligence and other complex models, including how lenders must use specific and accurate reasons when taking adverse actions against consumers

  ▷ With the growth of advanced algorithms and personal consumer data in credit underwriting, this means creditors cannot simply use CFPB sample adverse action forms and checklists if they do not reflect the actual reason for the denial of credit or a change of credit conditions

  ▷ Legal requirements apply even if customer applications were graded on data that may not intuitively relate to their finances

  ▷ References the prior 2022 circular regarding use of black-box credit models using complex algorithms

► June 2023 CFPB Issue Spotlight regarding AI Chatbots in Consumer Finance and increased complaints from frustrated customers trying to obtain straightforward answers or resolve a problem, and highlighted risks of noncompliance with consumer laws, diminished customer service and trust, data security risks, and other potential harm to consumers

Consumer Law Impacts and Fair Lending (continued)

► June 21, 2023: OCC, Treasury, Federal Reservice, FDIC, NCUA, CFPB and FHFA issued NPRM to implement quality control standards for use of automated valuation models by mortgage originators and secondary market issuers for fairness in home appraisals

► April 25, 2023: The Department of Justice, the CFPB, the Federal Trade Commission and the US Equal Opportunity Commission (EEOC) issued a Joint Statement on Discrimination Efforts and Bias in Automated Systems: References impacts on civil rights, fair competition, consumer protection, and equal opportunity:

 ▷ AI tools can turbocharge fraud and automate discrimination, and reiterates the agencies will use enforcement tools to combat unfair or deceptive practices or unfair methods of competition

 ▷ April 2023 policy statement to explain abusive conduct, which was not specific to AI, but referenced that the prohibition would cover abusive uses of AI technologies to, for instance, obscure important features of a product or service or leverage gaps in consumer understand

 ▷ August 2022 interpretive rule regarding algorithmic marketing and advertising (digital marketers as service providers under the Consumer Financial Protection Act)

 ▷ May 2022 "Black Box" Algorithms Circular

Consumer Law Impacts and Fair Lending (continued)

▶ The CFPB has prioritized "digital redlining", including bias in algorithms and technologies marketed as AI; CFPB is working with federal partners to protect homebuyers and homeowners from algorithmic bias in home valuations and appraisals through rulemaking

▶ Repeat offenders use of AI technology: CFPB has proposed a registry to detect repeat offenders, which would also require nonbanks to report certain orders related to consumer services, and would allow the CFPB to track companies whose repeat offenses involve the use of automated systems

▶ CFPB has launched a mechanism for tech workers who know of potential discrimination or other misconduct to become whistleblowers (including engineers, data scientists, and others with knowledge of the algorithms and technologies used by companies)

▶ See also CFPB UDAAP Materials including CFPB UDAAP Examination Manual, Interpretive Rule on Marketing and Ads, and Policy Statement of Abusive Conduct

▶ The Federal Trade Commission has also released other various guidance documents relating to AI over the past few years concerning fairness, bias, misrepresentation, lack of accountability, and misuse

Governance and Regulation – Updated Third-Party Risk Management Guidance

▶ Financial Institution collaboration with fintechs will continue to be a focus with ongoing development of technology and AI in banking services

▶ Updated inter-agency guidance (Federal Reserve, the OCC, and the FDIC) on risk management of third-party relationships (June 9, 2023)

▶ Guidance replaces prior guidance, but it still a risk-based and principled approach, no specific aspects for AI technology

▶ Cross references other guidance such as Interagency Guidelines Establishing Standards for Safety and Soundness, and Information Security

▶ Reiterates that use of third parties does not diminish bank responsibility to the same extent as if its activities were performed in house

▶ Acknowledges that smaller banks may have less negotiating power with prominent fintechs, but expects that other third parties may be considered, or banks should join efforts through a consortium or industry organization

Governance and Regulation –
Updated Third-Party Risk Management Guidance (continued)

► Emphasizes the need for more comprehensive and rigorous oversight for high risk, critical activities, including those that:

  ▷ Cause a banking organization to face significant risk if the third party fails to meet expectations

  ▷ Have significant customer impacts, or

  ▷ Have a significant impact on a banking organization's financial condition or operations

► Covers expected practices across the risk management life cycle: inventory of third-party relationships, contract provisions and oversight and accountability (*i.e.,* monitoring, audits and assessments, including for bias)

Governance and Regulation-Privacy and Data Security

► Proposed American Data Protection and Privacy Act ("ADPPA") in July 2022 that includes AI and discriminatory impact of algorithms, but has not moved forward

► Financial Institution Privacy and Data Security:

  ▷ Regulation P and the Gramm Leach Bliley Act of 1999 ("GLBA")

  ▷ Federal Interagency Guidelines Establishing Information Security Standards (Section 501(b) of the GLBA required appropriate standards): Appendix B to 12 CFR Part 30 (OCC), 208 (FRB), 364 (FDIC)

Governance and Regulation – Broader AI Laws

► European Union has proposed the EU AI Act, which is being negotiated with the council of the EU and member states before becoming law and would be the first comprehensive legal framework for AI

► The U.S. passed the National AI Initiative of 2020 to coordinate federal efforts to advance trustworthy AI applications, research, and US leadership in the development and use of AI in the public and private sectors

► The CHIPS and Science Act of 2022 also included support for the advancement of trustworthy AI

► The National Telecommunications and Information Administration (NTIA) – the executive branch agency in the Department of Commerce responsible for advising the President on telecommunications and information policy issues – issued an AI Accountability Policy Request for Comment (RFC) April 23, 2023; received over 1600 comments and will develop a final report:

  ▷ Includes options such as laws regulating AI or incentivizing the adoption of self-regulatory frameworks, and potential for different approaches for specific industries

  ▷ The RFC listed topics and 34 targeted questions (*i.e.,* audit and assessments, quality assurance certifications)

Governance and AI Regulation – (continued)

► President Biden Executive Order on October 30, 2023 on the Safe, Secure and Trustworthy Development and Use of AI

► On July 27, 2023, the House Energy and Commerce Committee approved the AI Accountability Act, which would direct the head of NTIA to conduct a study on accountability measures for AI systems used by communications networks

► White House Office of Science and Technology Policy's Blueprint for a (non-binding) AI Bill of Rights with five principles for AI systems that have the potential to impact civil rights of Americans:

  ▷ Safe and effective systems

  ▷ Algorithmic discrimination protections

  ▷ Data privacy

  ▷ Notice and explanation

  ▷ Human alternatives

► National Institute of Standards and Technology (NIST) AI Risk Management Framework

Governance and Regulation – More US Technology and AI Laws (continued)

► Equal Employment Opportunity Commission has an AI and Algorithmic Fairness Initiative and has released guidance exploring how the Americans with Disabilities Act applies to AI-supported hiring

► Do copyright, trademark, patent, and trademark protections apply to AI?

  ▷ Infringement and rights of use issues, ownership of AI-generated work, and unlicensed use in training data

  ▷ Clarifying definition of unauthorized derivative work

  ▷ Current copyright law does not protect works created solely by artificial intelligence, even if produced from a text prompt by a human

  ▷ Fair Use law does permit use of copyrighted material when training AI models, but there are a number of lawsuits challenging this

► There are also many other laws beyond financial services (healthcare, housing, marketing/advertising,) but impacting customers

Governance and Regulation-State Privacy and AI Laws

► Proliferation of state (and even municipal) laws (*i.e.,* data privacy laws), although financial institutions are generally governed by GLBA:

  ▷ in the 2023 legislative session, at least 25 states, Puerto Rico and the District of Columbia introduced artificial intelligence bills, and 15 states and Puerto Rico adopted resolutions or enacted legislation (National Conference of State Legislatures)

  ▷ Many state consumer privacy laws allow consumers to opt out of profiling in furtherance of automated decisions with legal or similarly significant effects

  ▷ Privacy laws effective in 2023: CA, CO, CT, VA and UT (NV did not include AI references)

  ▷ In recent sessions MT, IN, OR, TN, and TX passed privacy laws including AI provisions, many other bills were introduced

► Other states have passed various AI laws such as requiring data protection and impact assessments, regulating use of biometric data or preventing algorithmic decisions based on individuals' protected personal traits, use of algorithms in hiring and employment decisions, regulating AI used by the government, increasing transparency and understanding (*i.e.*, studies and task forces), and in CT creation of an office of AI

Governance and Regulation-State Privacy and AI Laws

► NY bills have introduced a comprehensive privacy law and digital fairness act that would give consumers more control over automated decisions used for profiling and require impact assessments

► New York City even passed a law, effective January 2023, regulating the use of AI in hiring, and requiring employers to notify candidates about the use of such tools

► On November 27, 2023, California Privacy Protection Agency issued draft regulations on automated decision-making technology (ADMT), which will implement provisions of the California Privacy Rights Act amendments to the California Consumer Privacy Act (CCPA)

► CA legislature in August, 2023 adopted Senate Concurrent Resolution 17 affirming the principles of the AI Bill of Rights

► On September 6, 2023, CA Governor Newsome signed Executive Order N-12-23, including the initiation of various studies, reports, and guidelines in the coming year, which will address opportunities and potential risks related to the use of GenAI

► On October 13, 2023, CA 302 signed by Governor Newsom requires the state to conduct by September 1, 2024 an inventory of high-risk automated decision systems developed or procured by state agencies