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Case Studies on Integrating Artificial Intelligence in Finance to Transform Decision Making and Risk Management for Enhanced Financial Outcomes

Madiha Madiha[1], Kira Sam[2], Sanjai Kumar[3] and Raja Vavekanand[4,*]

[1] Metropolia University of Applied Sciences, Myllypurontie 1, Helsinki, Finland
[2] University Of Salento, Piazza Tancredi, 73100 Lecce LE, Italy
[3] University of Sindh, Jamshoro 76080, Sindh, Pakistan
[4] Datalink Research and Technology Lab, Islamkot 69240, Sindh, Pakistan

Abstract

Artificial intelligence (AI) is transforming the financial sector by revolutionizing risk management and enhancing personalized banking experiences. This study examines the role of AI in finance by analyzing how companies such as AlphaSense and Kasisto utilize AI-driven solutions to optimize financial decision-making and customer interactions. AI's advanced capabilities in data analysis, credit underwriting, and automated customer service have significantly enhanced efficiency, accuracy, and accessibility within the financial services sector. The paper explores key AI technologies, including machine learning, natural language processing (NLP), and generative AI, which drive this transformation. Despite its numerous advantages, the integration of AI in finance presents challenges such as data privacy concerns, ethical considerations, and regulatory compliance. The study highlights the importance of addressing these challenges to ensure the responsible and sustainable adoption of AI in the financial sector. By showcasing the contributions of leading AI-driven financial solutions, this research provides valuable insights into the evolving financial landscape and the potential of AI to redefine financial services, making them more inclusive, efficient, and secure.

1 Introduction

In the financial sector, artificial intelligence is becoming a more powerful driver for change, transforming conventional procedures and the way financial risk decisions are made. This industry has been significantly impacted by businesses such as Ocrolus [19], Zest AI [10], Alpha Sense [36], and Kasisto [11], which have leveraged AI to enhance productivity, mitigate risks, and streamline operations.

The advanced developments in the latest technologies like AI and its applications have significantly changed the overall world and operating dynamics of financial institutions. The financial advising industry, on the

other hand, has long relied on human expertise to navigate complex financial landscapes and provide tailored advice. The advent of artificial intelligence technology has not only created unprecedented opportunities but also caused a paradigm shift and raised important questions about the profession's future. With the introduction of AI-driven platforms by companies like Ocrolus [19] and Kasisto [11], the handling of financial data and customer interactions has evolved, enabling faster and more precise decision-making. Zest AI [1] is addressing significant issues of fairness and inclusion in lending by employing AI to assess loan applications and detect biases, increasing loan approvals for underrepresented groups without increasing risks. AlphaSense [36] has transformed market research and analysis with its AI-powered search engine by offering professionals different content sources. Focusing on how four companies, Ocrolus, Zest AI, AlphaSense, and Kasisto, are transforming banking experiences and financial risk decisions, this study will analyze the effects of artificial intelligence (AI) on the financial industry. The needs and techniques for implementing AI to improve risk management and operational efficiency are outlined in this paper, which looks closely at how these companies employ it [13]. This study also looks at research on how AI is democratizing access to financial services by assisting the financial sector in its efforts to become more transparent and inclusive. This study will contrast the capabilities of AI-driven platforms with conventional financial services to give a comprehensive understanding of the technological advancements that are driving the industry's transformation. The practical, ethical, and legal implications of AI's application in finance will also be covered in the essay, along with other concerns and difficulties that arise [4].

2 Literature Review

Artificial intelligence (AI) is causing a transformation in the banking sector, improving risk management, customer experiences, and optimizing operational efficiency [13]. Recent advancements in machine learning [8], natural language processing (NLP), and predictive analytics have enabled financial institutions to leverage AI in various fields, including fraud detection, credit scoring, and customized banking solutions [15]. This literature review explores key Industry studies and publications illustrating how artificial intelligence is transforming the banking sector, focusing on its applications, benefits, challenges, and future potential [6].

2.1 AI Applications in Finance Risk Management

AI's incorporation into financial risk management has enabled financial institutions to enhance their decision-making processes by analyzing vast amounts of data with unprecedented accuracy [13]. Several studies have underscored the potential of AI to enhance regulatory compliance, fraud detection, and risk assessment [13].

2.1.1 Credit Risk Assessment

Evaluation of credit risk is an essential part of financial decision-making, and AI has introduced significant improvements in this domain [13]. According to Kearns, AI-based Machine learning algorithms are used by credit scoring models to examine both conventional and unconventional data sources, including social media.

Behavior, transaction history, and financial records [12]. This method allows for more precise risk profiling. And ensures that underserved populations, such as those without formal credit histories, have access to financial services. Ocrolus [19] and Zest AI [1] have been recognized for their contributions to AI-driven credit risk management. Ocrolus's [20] machine learning models analyze financial documents with over 99% accuracy, while Zest AI's [1] underwriting models increase loan approvals for marginalized communities by 41% without increasing risk levels. These case studies illustrate how AI can democratize access to credit and reduce bias in lending practices.

2.1.2 Identification and Avoidance of Fraud

The banking industry's ability to detect fraud has been greatly improved by AI [4]. Conventional techniques for detecting fraud mostly depended on rule-based systems, which frequently failed to identify changing fraud trends. In contrast, machine learning algorithms can analyze patterns and anomalies in real-time, identifying fraudulent transactions with high precision [15]. Research by Hilton indicates that AI-driven fraud detection models utilize deep learning techniques to monitor transaction patterns, flagging suspicious activities based on historical data [9]. Ocrolus, for example, integrates optical character recognition (OCR) and AI to analyze financial documents and detect discrepancies that could indicate fraud [20]. AI's ability to process vast datasets in real time enables financial institutions to take proactive measures against fraudulent activities [3].

2.1.3 Regulatory Compliance and Risk Mitigation

Compliance with evolving regulatory frameworks is a significant challenge for financial institutions. AI-powered compliance tools have been developed to automate monitoring and reporting processes, ensuring adherence to regulations such as anti-money laundering (AML) and Know Your Customer (KYC) requirements [22]. Studies highlight how AI enables automated compliance checks by examining consumer information and looking for possible legal infractions. AI systems can also track changes in financial regulations and update compliance protocols accordingly [4]. Zest AI's Fair Boost technology, for example, ensures fair lending practices by evaluating multiple variables to minimize discriminatory bias in loan approvals [10].

2.2 AI in Personalized Banking

The financial industry is increasingly adopting AI to offer personalized banking experiences that cater to individual customer preferences [7]. By leveraging AI, banks can analyze customer behavior, anticipate needs, and provide tailored financial solutions [11].

2.2.1 AI-Powered Virtual Assistants

AI-driven virtual assistants and chatbots have become integral to modern banking services. These assistants utilize NLP and machine learning to engage customers, answer queries, and assist with financial transactions [25]. Research shows that AI chatbots significantly reduce operational costs by handling routine customer interactions without human intervention [17]. Kasisto, a leading AI provider in personalized banking, has deployed its KAI platform across major financial institutions, offering 24/7 customer support [11]. Studies show that Kasisto's chatbot, Gabby, implemented at First Financial Bank, led to a 10% rise in the number of new accounts opened and enhanced customer satisfaction rates [11]. Similarly, Scout, the AI chatbot of Meriwest Credit Union, saved more than 250 hours of call center workload within its first month of deployment.

2.2.2 Market Intelligence and Data Analytics

AI-driven platforms, such as AlphaSense, have transformed market intelligence by aggregating and analyzing vast financial data [33]. AlphaSense's AI-powered search engine integrates NLP and deep learning to provide financial professionals with actionable insights derived from earnings reports, research publications, and financial news [15]. According to Vanian, the capacity of AI to handle vast amounts of unstructured financial data allows investment analysts to make informed decisions quickly [22]. Financial experts may now monitor and evaluate numerous firms thanks to AlphaSense's Smart Summaries feature. Simultaneously, improving efficiency and decision-making accuracy [33].

2.2.3 Predictive Analytics for Customer Insights

Financial institutions use predictive analytics powered by AI to learn more about the preferences and behavior of their customers. Machine learning algorithms analyze transaction patterns, spending habits, and demographic data to offer personalized product recommendations [23]. Research by Rauch indicates that AI can identify cross-selling and up-selling opportunities, allowing banks to provide tailored investment and insurance options to customers [7]. Zest AI's predictive analytics capabilities enable lenders to offer customized loan products that align with customers' financial goals and repayment capacities [10].

2.3 Challenges and Ethical Considerations

Despite AI's transformative potential, several challenges and ethical concerns must be addressed to ensure adoption of AI in the banking industry is accountable.

2.3.1 Bias and Fairness

One of the primary concerns surrounding AI in finance is bias in decision-making algorithms [15]. Studies by Dass and Siddiqui indicate that AI models trained on biased datasets may perpetuate existing inequalities, leading to unfair credit decisions. Zest AI has addressed this challenge by incorporating fairness algorithms into its underwriting models to mitigate bias and promote inclusivity [10].

2.3.2 Data Privacy and Security

Since financial institutions handle enormous volumes of sensitive consumer data, protecting data security and privacy is still of utmost importance. To avoid data breaches, AI systems must use strong cybersecurity safeguards and adhere to data protection laws such as the General Data Protection Regulation (GDPR) [7]. To gain the trust of regulators and consumers, a Simplilearn paper highlights the significance of explainability and openness in AI decision-making processes [13]. Financial institutions must adopt AI models that provide clear explanations for their decisions to avoid potential legal and ethical challenges [16, 21].

2.3.3 Integration with Legacy Systems

Many financial institutions still rely on legacy systems, making AI integration challenging. Studies highlight the need for scalable AI solutions that can seamlessly integrate with existing banking infrastructure without causing operational disruptions [3].

The literature highlights AI's profound impact on financial risk management and personalized banking. Companies like Ocrolus [20] and Zest AI [10] have pioneered AI-driven solutions that enhance credit underwriting, fraud detection, and customer experiences. However, challenges related to bias, data security, and regulatory compliance must be addressed to ensure ethical AI financial adoption. Financial institutions must use cutting-edge technologies as AI develops further to stay competitive and satisfy consumers' increasing needs [5].

3 Financial Advising Before AI

Before, Decision-making and chance organization were transcendentally human when artificial intelligence was integrated into the banking sector [13]. This relied on conventional financial ideas, undeniable facts, and personal supremacy. Cash-related specialists, checking brokers, advisors, and agents played basic parts in coordinating investment choices, supervising risks, and providing personalized cash-related services. These customary Techniques established the foundation for comprehending customer demands, risk, and the budgetary promotion stream examination [32].

Traditionally, the cash-related organization Industry encircled a broad cluster of pieces such as insurance, keeping management, Wander organization, and brokerage, both collaborating with its extraordinary collection of guidelines and forms [14]. Important, authoritative, and creative changes occurred in the budgetary section's development, especially in the latter half of the 20th century. The 1999 Gramm-Leach-bliley Act, which canceled the Glass-Steagall Act, made it possible for schools to provide a range of organizations, overseeing accounts, securities, and assurances under one roof. This deregulation with inventive headways cleared the path to more intricate arrangements of financial organizations. The seeming advancement of development, particularly the web, changed the budgetary organization's industry, computerizing shapes and making information more open [14]. This move not as it were extended adequacy
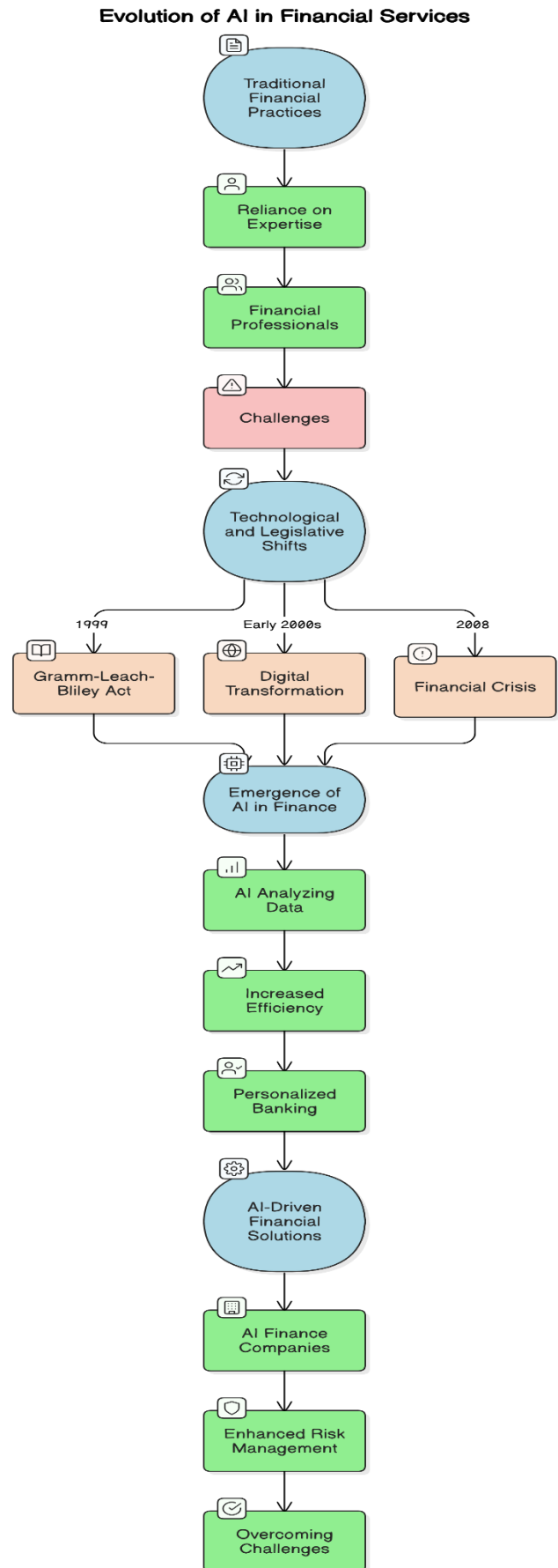

Figure 1. Evolution of AI in financial services.

Table 1. Comparative overview of AI-Driven financial companies.

Feature	Ocrolus	Zest AI	AlphaSense	Kasisto
Founded	2014	2009	2011	2013
Headquarters	New York City	Los Angeles	New York City	New York City
Core Focus	Financial Document Analysis	Fair Credit Scoring	Market Intelligence	Conversational AI for Banking
Key Technologies	OCR, ML, HITL	FairBoost, ML, XAI	NLP, Gen AI, Deep Learning	NLP, ML, Predictive Analytics
Impact	80% faster processing	41% more approvals	75% faster insights	250+ hours saved monthly
Market Reach	Lenders Banks	Credit Unions, Banks	Investment Firms	Retail Banks, Credit Unions

but besides displayed cutting-edge challenges in managing budgetary risks and maintaining adherence to regulations. The 2008 Grandstand crash highlighted the need for extraordinary risk management and financial supervision, highlighting the limitations of standard budgetary controls and the risk of mechanical progressions [13]. In this setting, AI is created as a dynamic compel, publicizing present-day conceivable results for managing cash-related threats and moving forward with personalized overseeing an account experience [7]. More sophisticated and enthusiastic chance organization techniques were made possible by AI's ability to evaluate enormous amounts of data, identify patterns, and do predictive analyses [18]. Cash-related educators saw how AI may change the market, which fueled the growth of AI-backed businesses focused on using this advancement to provide more advantageous, accurate, and customized financial services, as shown in Figure 1.

The characteristic challenges of ordinary financial reporting, like manual data examination, time-consuming processes, and the possibility of human error, were seen as opportunities by AI-backed companies. AI has made it possible for more realistic chance organization and individualized customer experiences by automating these shapes and using modern computations, verifying a fundamental step in the financial organization's landscape [13].

4 Case Studies on AI Integration in Finance

The following case studies examine how leading businesses, Kasisto, Zest AI, AlphaSense, and Ocrolus [10, 11, 19] have successfully implemented AI technologies to enhance financial operations, risk management [24], and customer experiences, as shown in Table 1.

4.0.1 Ocrolus: Automating Financial Document Analysis
Ocrolus [19], based in New York City and established in 2014, specializes in automating financial document processing using AI-powered solutions. The company focuses on enhancing the efficiency and accuracy of document verification in the lending and banking

sectors. AI solutions and technologies used:

- **Optical Character Recognition (OCR):** Advanced OCR algorithms extract key data from financial documents such as pay stubs, tax returns, and bank statements.

- **Machine Learning Models:** Predictive models identify discrepancies, assess risk, and detect fraudulent documents [13].

- **Human-in-the-Loop (HITL) Technology:** Combines AI automation with human verification to ensure over 99% accuracy [15].

- **Fraud Detection Algorithms:** Pattern recognition models analyze data anomalies and inconsistencies in real time [7].

- **Efficiency:** Reduction of loan processing times by 80%, enabling lenders to approve applications faster [1].

- **Risk Mitigation:** Fraud detection capabilities have saved lenders millions by identifying suspicious patterns in financial records.

- **Scalability:** Ocrolus' AI technology processes over **100 million pages of financial documents** annually.

Expansion into the mortgage lending and banking sectors. Enhanced predictive analytics for better fraud detection and credit underwriting.

4.1 Zest AI: Fair Lending and Credit Scoring
Founded in 2009 and based in Los Angeles, Zest AI specializes in AI-driven credit underwriting solutions [1]. It aims to eliminate bias and improve financial inclusivity through advanced credit modeling techniques [28].

- **FairBoost Technology:** An AI-powered tool that evaluates hundreds of non-traditional data points to minimize bias in lending decisions.

- **Machine Learning Algorithms:** Credit risk models that analyze spending patterns, payment history, and behavioral data [26].

- **Explainable AI (XAI):** Provides transparency into credit decision processes, ensuring regulatory compliance [29].

- **Deep Learning for Credit Risk:** Identifies hidden patterns in applicant data, improving prediction accuracy.

- **Increased Loan Approvals:** A 41% increase in approvals for marginalized communities without increasing risk [1].

- **Bias Reduction:** Improved fairness in credit scoring [30], reducing discriminatory lending practices [28].

- **Regulatory Compliance:** Ensures alignment with financial regulations like the Fair Lending Act and GDPR.

Integration with alternative credit data sources, such as utility and rental payments. Development of real-time credit decision-making systems.

4.2 AlphaSense: AI-Driven Market Intelligence

AlphaSense [34], based in New York City and established in 2011, offers AI-powered financial search and market intelligence solutions. Its platform is widely used by investment firms, banks, and corporate strategists to gain actionable insights from financial data.

- **Natural Language Processing (NLP):** Extracts insights from earnings reports, financial filings, and news articles.

- **Generative AI (Smart Summaries):** Automatically generates concise financial reports from unstructured data.

- **Sentiment Analysis:** Determines market sentiment by analyzing qualitative financial text data.

- **Deep Learning Models:** Improve data categorization and personalized recommendations.

- **Informed Decision-Making:** Helps investment analysts track over **20 companies simultaneously**.

- **Efficiency:** Reduces the time needed for market analysis by 75%.

- **Revenue Growth:** Clients report an average of **20% faster decision-making**, leading to better investment strategies.

AI-driven forecasting models for market trends. Expansion into emerging markets with localized financial intelligence tools.

4.3 Kasisto: Conversational AI for Banking

Kasisto, based in New York City and established in 2013, develops AI-powered conversational platforms that enhance customer engagement in banking [11]. The company's flagship product, KAI, offers intelligent virtual assistants that provide personalized financial advice and support.

- **Conversational AI:** Provides 24/7 support through chatbots and voice assistants.

- **Machine Learning for Personalization:** Tailor's financial advice based on customer behavior and preferences.

- **Integration with Banking Systems:** Seamless interaction with core banking platforms for real-time data access.

- **Predictive Analytics:** Forecasts customer needs and suggests relevant financial products.

- **Enhanced Customer Experience:** 10% increase in account openings at First Financial Bank.

- **Operational Efficiency:** Reduced call center workload by over 250 hours within the first month of deployment.

- **Financial Inclusion:** AI-driven interactions improve accessibility for customers with limited financial literacy.

Expansion of AI-driven financial literacy tools. Multilingual chatbot support for global banking institutions.

5 AI Dealing with Financial Risk Decisions

Artificial intelligence (AI) is changing financial risk management, with businesses such as Ocrolus [19] and Zest AI [10] leading the way by implementing novel AI-driven solutions. These firms have made significant contributions to the financial services sector by improving machine learning, predictive analytics, and personalized consumer experiences [2]. This section looks at their responsibilities, inventions, and effects on the financial sector. Ocrolus [19] and Zest AI [1] stand out for three primary reasons: Both businesses have made remarkable advances in AI, notably in Predictive analytics and machine learning are essential for handling complex financial data and

Table 2. Role of artificial intelligence in financial risk management.

Application in Financial Risk Management	Benefits	Challenges
Forecasting market trends, credit risk scoring	Proactive risk mitigation, data-driven insights	Data quality and model bias
Fraud detection, anomaly detection in transactions	Improved accuracy, real-time analysis	High computational costs, interpretability
Analyzing financial news, regulatory compliance monitoring	Faster decision-making, automated compliance	Complexity in understanding financial jargon
Credit risk assessment, algorithmic trading	Identifying complex patterns, enhanced precision	Requires large datasets, overfitting risks
Automating repetitive risk assessment tasks	Efficiency, cost reduction	Limited adaptability to dynamic risks
Portfolio optimization, hedging strategies	Dynamic decision-making, adaptation to markets	Long training times, data dependence
Decision-making under uncertainty	Handling ambiguous data, flexible modeling	Difficulties in defining rules
Real-time risk monitoring, fraud detection	Improved data processing speed, scalability	Data privacy concerns, storage challenge

carrying out precise risk evaluations [13]. These advances assist financial organizations in transitioning from old approaches to data-driven decision-making processes, as shown in Figure 2.
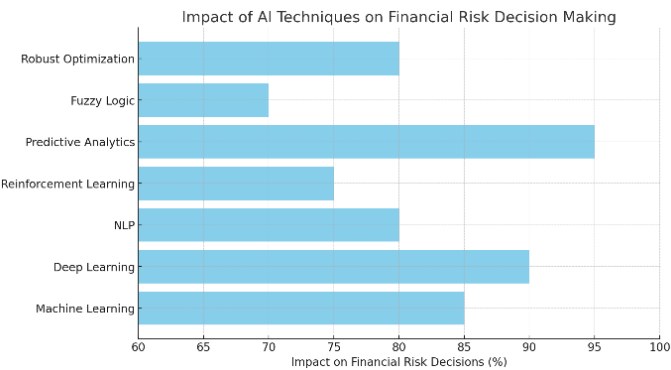

Figure 2. Graph depicting the impact of various AI techniques on financial risk decision-making.

Their AI-driven solutions have significantly improved credit underwriting and risk management by automating processes and providing real-time insights [13]. These improvements have not only increased efficiency but also raised industry standards for accuracy and compliance.

Ocrolus [20] and Zest AI [1] have utilized AI to personalize banking experiences, providing underserved populations with improved access to credit and financial services [1]. Their solutions address biases in financial decisions and contribute to greater inclusivity in lending practices [1].

5.1 Role in Financial Risk Management

AI has redefined financial risk decision-making by enhancing the ability of institutions to evaluate borrowers, detect fraud, and mitigate financial risks [13]. With roughly 27% of payments processed with credit cards as of 2020, artificial intelligence has become more and more important in credit underwriting. Evident [28]. Ocrolus [19] and Zest AI [10] are revolutionizing this domain by implementing machine learning algorithms that assess creditworthiness with greater accuracy, reducing manual errors and bias, as shown in Table 2.

These AI-powered solutions analyze vast datasets to identify patterns, detect potential financial risks, and enhance planning and forecasting. In doing so, they empower financial institutions to make informed decisions quickly and efficiently, fostering transparency and accuracy across the sector.

5.2 Ocrolus: Automating Financial Document Analysis

Founded in 2014 and headquartered in Ocrolus [20] in New York City, has become a significant force in AI-driven financial risk management [13]. The company's primary focus lies in automating financial document analysis, allowing Lenders can make choices more quickly and accurately with less human involvement, as shown in Table 3.

5.2.1 Launch of "Instant" Solution

In September 2023, Ocrolus [19] introduced its flagship product, Instant, which provides AI-powered, reasonably priced methods for examining financial records like tax returns, pay stubs, and bank balances. Instant boasts an accuracy rate of over 99%, allowing lenders to significantly reduce fraud and credit risks while speeding up loan approvals.

Table 3. Comparative analysis: Ocrolus vs. Zest AI.

Criteria	Ocrolus	Zest AI
Core Focus	Financial document automation and fraud detection	AI-driven credit underwriting and fair lending
Key Technologies	OCR, Machine Learning (ML), Big Data, HITL	FairBoost, ML, Explainable AI (XAI), NLP
AI Model Accuracy	99%+ document accuracy	41% increase in fair loan approvals
Processing Speed	Reduces loan approval time by 80%	60% faster loan processing
Bias Mitigation	Identifies inconsistencies in documents	Reduces racial/gender bias in lending by 49%
Fraud Detection	Advanced fraud detection using AI-based pattern recognition	Detects fraudulent loan applications using deep learning models
Scalability	Processes over 100 million pages annually	Processes 39+ million loan applications
Regulatory Compliance	Aligns with KYC, AML, and GDPR	Complies with the Fair Lending Act and GDPR
Customer Impact	Faster processing, improved credit risk profiling	Expanded credit access for marginalized groups
Integration Capability	The API-first approach integrates with financial CRMs and lending platforms.	Seamless integration with banking systems and alternative credit data sources
Operational Efficiency	80% reduction in manual document processing	45% reduction in manual loan evaluations
Cost Efficiency	Reduces operational costs by 60%	Reduces credit risk assessment costs by 50%
Use Cases	Mortgage lending, small business loans, and financial fraud detection	Credit scoring, underwriting, and inclusive lending
Market Position	Leading in document automation for fintech firms	Leading in AI-powered fair lending solutions
Competitive Advantage	Human-in-the-loop verification ensures accuracy	AI-driven fairness algorithms ensure ethical lending
Challenges	High computational costs, data privacy concerns	Need for explainability and transparency in AI decisions
Innovation Focus	Developing AI-powered predictive analytics tools	Enhancing fairness and explainability in AI models
Security Measures	Encrypted document processing, secure cloud-based storage	AI-driven risk profiling to enhance fraud prevention
Financial Backing	$80M Series C funding, valuation over $500M	Processed $250B in loans based on AI models
Future Roadmap	Expansion into mortgage and compliance automation	Integrating AI with alternative financial data sources

5.2.2 Funding and Market Expansion

Ocrolus [20] secured a $Series C investment 80 million, bringing its valuation to over $500 million, reflecting growing industry confidence in AI-driven lending solutions. The company aims to expand its solutions to the banking and mortgage lending industries, responding to the growing need for digital lending technologies in the post-pandemic era.

5.2.3 Technological Edge

Ocrolus [19] leverages a combination of optical character recognition (OCR), big data, machine learning, and Human-in-the-Loop (HITL) data validation to guarantee unmatched precision. The business stands out in a crowded market thanks to its distinctive fraud detection and compliance overlay features.

Beyond operational effectiveness, Ocrolus wants to democratize financial services by providing credit assessment tools that enable lenders to cater to diverse financial backgrounds. By automating document verification and analysis, Ocrolus gives lenders the authority to give credit to those who were previously underserved, fostering greater financial inclusion.

5.2.4 Zest AI: Redefining Fair Lending and Credit Scoring

Zest AI was established in 2009 and is based in Los Angeles [10] has positioned itself as a leader in fair

Table 4. AI applications in financial risk decisions.

AI Technique	Application in Financial Risk	Impact on Decision-Making
Machine Learning	Predicting credit risk, fraud detection	Improves the accuracy and timeliness of risk assessment
Deep Learning	Analyzing market trends, identifying complex patterns in financial data	Enhances the ability to predict future financial risks
Natural Language Processing (NLP)	Analyzing financial news, reports, and social media for sentiment analysis	Provides insights into market sentiment and risk factors
Reinforcement Learning	Optimizing investment portfolios, adjusting to market conditions	Helps in dynamic risk-adjusted decision making
Predictive Analytics	Forecasting economic downturns, stock market volatility	Allows for proactive risk mitigation strategies
Fuzzy Logic Systems	Assessing uncertainties in financial modeling	Enables decisions in ambiguous or uncertain environments
Robust Optimization	Portfolio optimization under uncertainty	Helps in making risk-averse decisions under uncertain conditions

lending practices by using AI to democratize access to credit and reduce biases in lending decisions [1, 28]. The company focuses on providing lenders with AI-driven tools to make fair, accurate, and inclusive credit decisions.

5.2.5 AI-Driven Underwriting Models

Zest AI has developed nearly 400 AI underwriting models, which allow lenders to evaluate loan applications more holistically by analyzing a broader range of financial and non-traditional data points [1]. These models have resulted in Latino candidates seeing a 49% rise in approvals, Black applicants seeing a 41% increase, women seeing notable advancements, and older adults, ensuring financial inclusivity.

5.2.6 FairBoost Technology

To address bias, Zest AI in conventional credit scoring systems [1] introduced Fair Boost, a proprietary AI tool that evaluates hundreds of variables to provide fair and transparent lending assessments [29].

FairBoost enables lenders to assess applicants based on more comprehensive data, reducing reliance on conventional credit scores that often disadvantage minority groups [1].

5.2.7 Massive Industry Reach

Zest AI has processed more than $250 billion in loans awarded based on its models, including over 39 million consumer loan applications [1]. The client base of the business has grown by 50% annually since 2020, highlighting the increasing adoption of AI-driven credit solutions.

Zest AI's solutions address systemic inequalities in the credit approval process by providing financial institutions with tools that support fair and ethical

lending practices [10]. By leveraging AI, Zest AI has empowered lenders to expand credit access to historically marginalized groups without increasing risk exposure, fostering a more equitable financial landscape, as shown in Table 3.

5.3 Future of AI in Financial Risk Management

The advancements made by Ocrolus [19] and Zest AI [10] in AI-driven risk management illustrate a promising future for financial institutions. As AI continues to evolve, the following trends are expected to shape the industry. Regulatory Compliance Integration, Enhanced AI models will support compliance with dynamic regulatory frameworks, ensuring ethical and legal AI use. Enhanced Fraud Detection, AI's predictive capabilities will continue to improve, enabling proactive fraud prevention strategies. Personalized Financial Services, Financial institutions will increasingly use AI to provide financial services and solutions that are customized to meet the demands of each customer, as shown in Table 4.

The integration of AI by Ocrolus [20] and Zest AI [10] marks a significant milestone in financial risk management. These companies demonstrate how AI enhances decision-making by improving efficiency, precision, and ease of access in the banking industry [13]. Industry standards for the ethical and inclusive application of AI are established by Zest AI's dedication to equitable lending procedures and Ocrolus' contributions to the automation of financial documents.

As the financial industry is still embracing AI-driven solutions, Ocrolus [19] and Zest [1] serve as guiding examples of how technology can drive positive change. Their innovations not only improve operational

efficiencies but also foster greater financial inclusivity and transparency in credit risk management [25].

6 AI Dealing in Personalized Banking

As the financial services industry evolves, artificial intelligence has the potential to alter the industry, particularly in the area of customized banking. AlphaSense [33] and Kasisto [11], two innovative businesses that leverage AI to satisfy the complex demands of today's tech-savvy consumers, serve as examples of this shift. AlphaSense [33] is renowned for its market intelligence search engine driven by artificial intelligence., On the other hand, Kasisto [11] is well-known for its conversational AI technologies that enhance client support. Both demonstrate how AI has a significant impact on modern banking operations. While Kasisto is an example of the state-of-the-art in financial data analysis and decision-making tools, AlphaSense [33] demonstrates the effective application of AI in service development and customer interaction. As shown in Table 5, the achievements of Ocrolus, Zest AI, AlphaSense, and Kasisto underscore the revolutionary potential of AI, establishing a new benchmark for the financial industry's future.

6.1 AlphaSense: AI-Driven Market Intelligence

AlphaSense [33] leverages AI to provide noteworthy experiences to show off bits of information. Its generative AI instrument, Sharp Follows, licenses cash-related experts to analyze tremendous information sources effectively. With a $150 million subsidizing circular in 2023, AlphaSense [33] continues to create its AI capabilities in financial information analytics. AlphaSense has emerged as a leader in the application of AI-driven advancements in the back business, having been founded in 2011 in New York City. Particularly through its creative see motor custom-made for advanced bits of information. The company has, as of late, secured a $150 million Course of Activity E financing circular, showing its solid growth position and speedy progression between $1.7 billion and $2.5 billion [3]. This fundamental idea, spearheaded by Bond and supported by pledges from Alphabet's CapitalG, Goldman Sachs, and Viking Worldwide, highlights the growing potential of AI in evolving budgetary institutions [3]. To improve how cash-related information is handled and presented, AlphaSense [33] has begun integrating generative AI advancements with broad language models (LLMs) [27]. By combining important data centers from both public and private sources, the company's "insights-as-a-service" organizes machine learning

and makes notable experiences visible in trade and back analytics. This feature is essential for providing essential details that surpass the typical outputs of AI models aimed at consumers, like ChatGPT. The demonstration of the generative AI technology from AlphaSense, Sharp Rundowns, talks about a fundamental advance in the application of AI inside financial organizations, as shown in Figure 3. Not at all like schedule methods, which regularly join manual information blends and examination, Fast Graphs empower budgetary pros to effectively monitor and assess a larger group of businesses. Counting advantage calls, reviewing reports, and condensing important data from specific sources. Unlike previous frameworks that required extensive human input and were prone to oversight, AlphaSense allows inspectors to thoroughly screen up to 20 companies [23]. Chris Ackerson, former IBM Watson and Vice President of Things at AlphaSense [33] meander bunch parcel explained the progress of generative AI from as it was upgrading essential functionalities to giving advanced educational tools [35]. AI at AlphaSense is centered on making strides in semantic search capabilities and organizing ceaseless volumes of content effectively. With the appearance of generative AI, be that as it may, the emphasis has moved toward making models that are not as they were organized but also make expedient, composed substance, meeting the illuminating needs of individual users. AlphaSense's shift to a more engaging customer experience is indicative of larger AI change initiatives, as it shows how to transform the organization from one that mostly responds to customer requests to one that proactively provides tailored information and recommendations. This simple action supports a conversational interface that allows an AI to predict customer demands. Impulse conversation, in this way, makes information interaction more natural and adjusted to the client's needs.

6.2 Kasisto: Conversational AI for Banking

Kasisto's [11] AI-powered chatbot, KAI, redesigns client advantage by advancing personalized cash offer help. Educate like To begin with, Cash-related Bank and Meriwest Credit Union have adopted Kasisto's courses of action, satisfying basic changes in client engagement and operational proficiency [25].

Kasisto's [11] commitments to the keeping cash part, especially through its AI-powered chatbot progression, internal and advanced client advantage characteristics, and personalized keeping cash experiences. Based

Table 5. Comparative overview of AlphaSense and Kasisto - key financial and technological highlights.

| Aspect	AlphaSense	Kasisto
Primary Platform	AI-driven market intelligence search engine	KAI AI-powered chatbot
Funding	$150 million (Series E, 2023)	Privately funded
Valuation Growth	Increased from $1.7B to $2.5B	Not publicly disclosed
Technology Used	NLP, Machine Learning, Large Language Models (LLMs)	Conversational AI, NLP, Deep Learning
Operational Impact	Tracks 20+ companies simultaneously	Handles workload equivalent to 2 full-time employees
Major Clients	Investment Firms, Analysts	JPMorgan, Standard Chartered, TD Bank
Key Achievements	Market leader in financial data analytics	10% increase in account openings (First Financial Bank)
User Engagement	Enhances analyst efficiency and decision-making	7,000 active users monthly
Profitability Impact	Improved market insights for investors	30% more profitable customers
Core Functionality	Aggregates and summarizes financial data	Enhances customer interaction and service
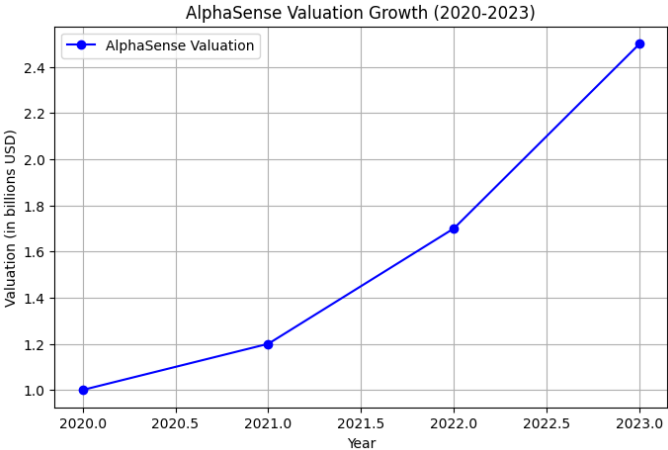
Figure 3. AlphaSense Valuation Growth (2020-2023): Shows the company's growth in valuation over four years, increasing from $1.0 billion in 2020 to $2.5 billion in 2023. This trend highlights AlphaSense's rapid expansion and market confidence driven by its AI-driven market intelligence solutions [33].

in Display Day York, Kasisto was established in 2013. KAI, Kasisto's organization, is renowned for its cash-related capabilities and the capacity to make virtually customized cash-back donations. The introduction of Gabby, the AI-advanced collaborator, at Cash-related Bank, is an exceptional example of KAI's sending. It spurred a 10% increase in the number of unused account openings and noteworthy increases in unmistakable cash-related things checking CDs, contracts, and individual impels. This traces the reasonability of AI in streamlining client normal and its role in upgrading cash-related product adoption by personalizing client encounters over both computerized and physical directing an account channel. Kasisto [11] also passed on another KAI orchestrate Scout, an AI-powered chatbot,

which was transferred to Meriwest Credit Union in February 2023. After a reasonable two weeks of presentation, Scout concluded the task of two full-time call center specialists. The 80,000 members of the credit union can communicate with this bot, advancing self-service capabilities, and joining consistently with automated cash management. All the while maintaining the curious Meriwest brand voice, the Meriwest team created the necessary questions and answers between November 2022 and January 2023 for Kasisto to support Scout, which launched in February 2023. Scout lacks common sense in both its operational impact and client interactions. The credit union saved between 250 and 300 hours in phone calls alone in the first month, as shown in Figure 5. Scout regularly distinguishes amongst around 7,000 meticulously motivated credit union employees and responds to customer inquiries in real-time during off-peak hours. Scout's incorporation into the credit union industry. As shown in Figure 4, the ability of Kasisto to pull important data through Meriwest's computerized account management orchestrates without encouraging the organization into the credit union's center, dismantling integration and reinforcement [10–15].

Kasisto's [11] CEO, Zor Gorelov, emphasized that KAI centers to democratize cash-related organizations utilizing conversational AI to offer assistance to clients making overwhelming cash-related choices, a confirmation keeping with its core purpose (Bank Computerization News, 2023). The company with Meriwest Credit Union grandstands both the possible pay impacts and the operational efficiencies achieved by KAI, both within and out. People who regularly interact with Scout have 30%
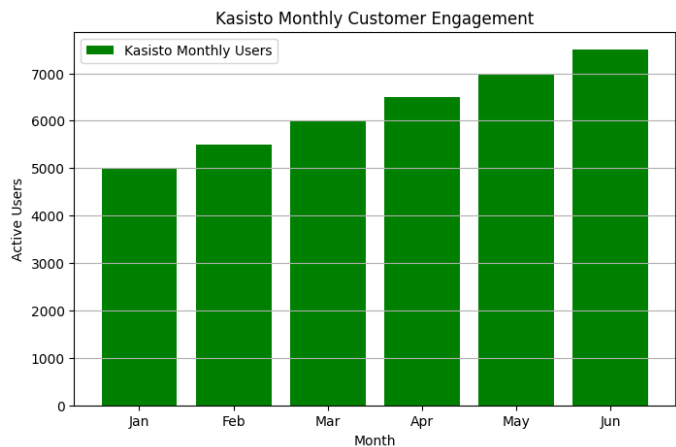
Figure 4. Kasisto Monthly Customer Engagement: Displays the number of active users interacting with Kasisto's [11] AI-powered chatbots from January to June, showing steady growth from 5,000 to 7,500 users. This reflects the increasing adoption and effectiveness of conversational AI in enhancing customer experience.

more advantages than traditional computerized account management clients. This demonstrates the wider financial and significant effects AI may have on education, leading to a redesigned customer relationship, reduced operating expenses, and increased competitiveness. Kasisto's [11] KAI organization is used by well-known financial experts worldwide, including JPMorgan, Standard Chartered Bank, and TD Bank, demonstrating its broad reach and abundance in the financial sector. This wide course of activity over basic keeping cash teaches KAI's adaptability and reasonability in shifting directing an account circumstance, from huge around the world banks to credit unions in the territory. With its cutting-edge KAI orchestration, Kasisto discusses the revolutionary possibilities of AI in show day directing an account, laying out how progression can essentially upgrade the ampleness and personalization of client experience in financial education. As banks and credit unions proceed to examine the complexities of budgetary innovation and client experience, the integration of cutting-edge AI approaches like those advanced by Kasisto will without a doubt play a significant role in shaping the future of personalized accounts.

The AI activities provided by Kasisto [11] and AlphaSense [33] demonstrate a wider trend toward more responsive, engaging, and personalized financial management systems. This action is to an amazing degree fueled by AI's capacity to handle never-ending volumes of information to pass on to personalized organizations and its capacity to make

strides in decision-making shapes [31, 35]. Both companies exemplify the move towards democratizing cash-related organizations, making them available and fair-minded over differing client socioeconomics. This joins, for the most part, underserved groups, in this way advancing financial inclusivity, which is a critical point of view of current financial circumstances.

In addition to signaling a dramatic change in the way services are provided, the introduction of artificial intelligence (AI) into the financial industry by trailblazers like Kasisto [11] and AlphaSense [33] shows how AI can lead to notable increases in customer satisfaction and operational effectiveness. With its AI-powered analytics, AlphaSense [33] has advanced market intelligence, and Kasisto's [11] conversational Customer service in the banking sector has been revolutionized by AI technology. Both businesses exhibit AI's flexible capacity to adjust and meet the complex needs of today's clients. Both offer specialized solutions that enhance financial decision-making and user experience. The innovative journey of AlphaSense and Kasisto not only enhances the operational and strategic facets of financial institutions but also establishes a new benchmark for customized banking in the future, as shown in Table 6.

Table 6. Key differences between AlphaSense and Kasisto.

Category	AlphaSense	Kasisto
Primary Function	Financial data analytics	Customer interaction support
User Base	Financial analysts and researchers	Retail banking customers
AI Focus	Data aggregation and summarization	Conversational AI and automation
Impact Area	Market Intelligence	Customer experience enhancement
Revenue Model	Subscription-based analytics tools	Licensing to financial institutions

7 Discussion

By improving decision-making, operational efficiency, and customer experiences, the incorporation of artificial intelligence (AI) into financial services has drastically changed conventional procedures. Platforms powered by AI, like Kasisto and AlphaSense, show the significant influence of AI in reshaping financial operations and customer interactions. AlphaSense leverages AI to provide financial professionals with actionable insights by aggregating and summarizing vast amounts of data, enabling informed decision-making with minimal manual
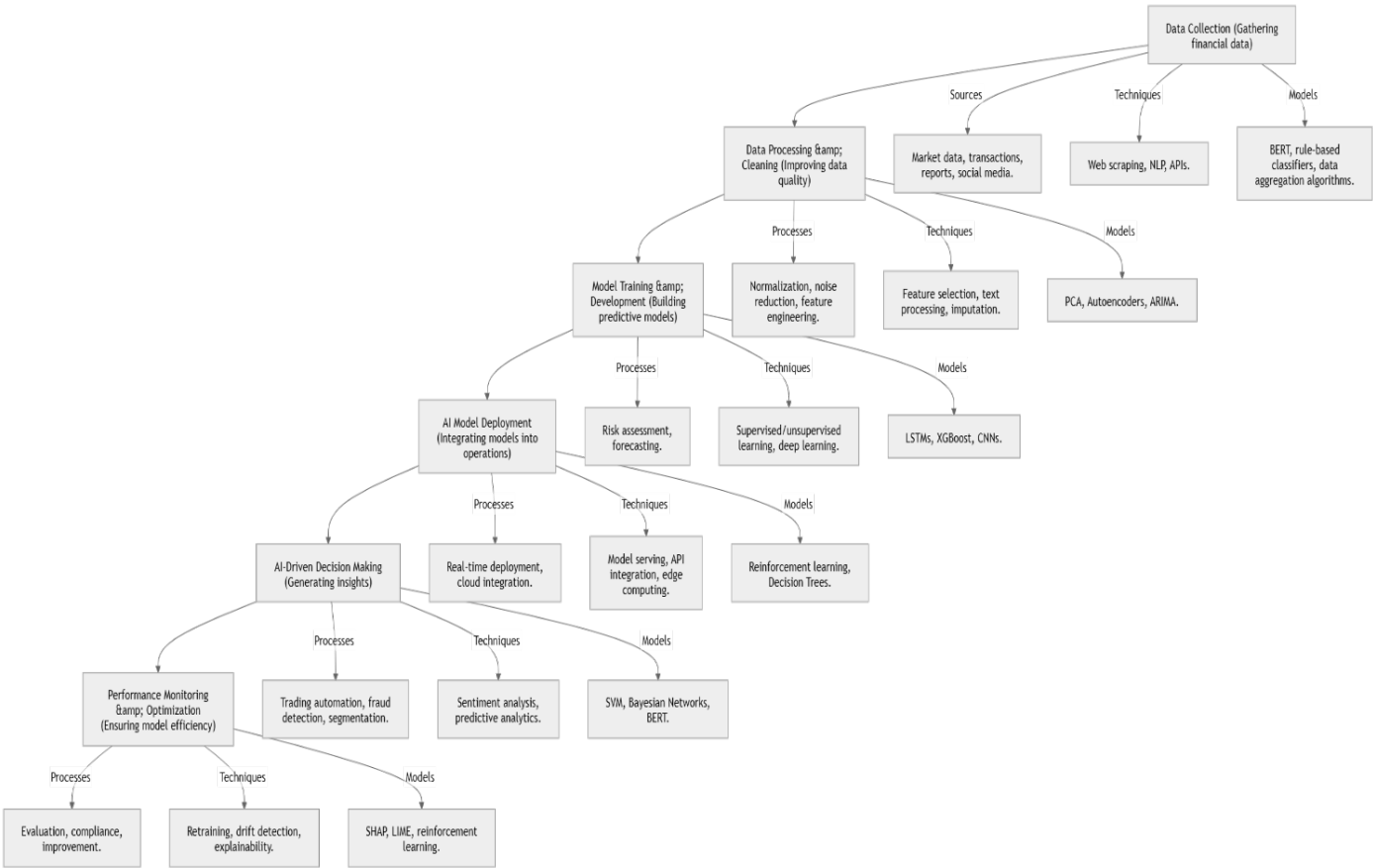
Figure 5. An overview of AI in finance.

Table 7. Financial tasks before and after AI implementation.

Task	Before AI	After AI
Credit Risk Assessment	Manual evaluation of financial history and credit reports	AI-driven algorithms analyze diverse data sources for accurate risk profiling
Fraud Detection	Rule-based detection with delayed response times	Real-time fraud detection using machine learning and pattern recognition
Customer Service	Human representatives handling queries	AI-powered chatbots provide 24/7 support and personalized responses
Loan Processing	Lengthy manual paperwork and approvals	Automated document processing and instant approvals using AI
Investment Advisory	Human financial advisors offering personalized advice	AI-based robo-advisors provide data-driven investment suggestions
Regulatory Compliance	Manual compliance checks and audits	AI automates monitoring and ensures real-time regulatory adherence
Portfolio Management	Static and manually adjusted investment strategies	AI-driven dynamic portfolio optimization based on real-time market data
Fraud Investigation	Post-event investigation with manual effort	AI detects anomalies proactively to prevent fraud before it occurs
Market Analysis	Time-consuming research and analysis by financial experts	AI-powered tools analyze vast data sets instantly and provide actionable insights
Transaction Processing	Delays due to human intervention	Real-time processing with minimal errors using AI automation
Customer Onboarding	Lengthy identity verification processes	AI automates KYC (Know Your Customer) and identity verification procedures.
Predictive Analytics	Limited forecasting based on historical trends	AI enhances forecasting with deep learning and real-time data analysis

effort. On the other hand, Kasisto's AI-powered chatbot, KAI, enhances customer engagement by offering personalized financial assistance and streamlining service delivery, reducing operational

costs while improving customer satisfaction. AI's role in financial risk management is equally significant, as it allows institutions to assess credit risk with greater accuracy, detect fraudulent transactions in real-time, and comply with evolving regulatory requirements, as shown in Table 7. Despite these benefits. There are several obstacles to the use of AI in finance, encompassing privacy, ethical issues, data concerns, and regulatory compliance. Financial institutions handle vast amounts of sensitive data, making robust cybersecurity measures essential to maintain trust and meet regulatory obligations. Additionally, the potential for bias in AI algorithms poses ethical challenges, as automated decision-making must be fair and transparent. Ensuring compliance with financial regulations also requires AI solutions that can adapt to changing legal frameworks without disrupting operations. Furthermore, integrating AI with legacy financial systems remains a significant hurdle, often requiring substantial investments in infrastructure and employee training. Looking forward, AI is expected to further revolutionize the financial sector through hyper-personalized banking experiences, autonomous financial advisory systems, and enhanced fraud detection capabilities. As AI continues to evolve, financial institutions must combine duty and innovation, making sure that AI technologies are deployed ethically, securely, and in compliance with regulatory standards to drive long-term growth and financial inclusivity, as shown in Figure 5.

8 Conclusion

The integration of artificial intelligence (AI) has revolutionized the financial sector, transforming the delivery of services and procedures for making decisions. This study examines how artificial intelligence is affecting the banking sector, emphasizing developments from Ocrolus, Zest AI, AlphaSense, and Kasisto. Ocrolus and Zest AI've ameliorated fiscal threat operations through AI technologies, enabling more efficient and precise handling of financial data. This has created new paradigms for credit underwriting and threat assessment, enhancing financial inclusivity and equity. Through conversational AI and AI-driven request intelligence, AlphaSense and Kasisto have transformed personalized banking. AlphaSense has improved the skills of financial experts, furnishing important tools for data analysis and interpretation. The banking experience has been validated by Kasisto's AI-powered chatbots, which streamline customer

service. AI has a big impact on the financial sector, enabling a move towards further interactive systems that prognosticate stoner requirements and give individualized results. AI tackles long-standing issues similar to threat operation, effectiveness, and client satisfaction, signifying a significant shift in the way that the industry manages and uses data. Rethinking the content of financial services in the digital age is just as important as technology innovation in the journey toward AI integration. Financial institutions need to keep adopting innovations and creating an environment that encourages continuous improvement and modification. The achievements of Ocrolus, Zest AI, AlphaSense, and Kasisto underscore the revolutionary potential of AI, establishing a new benchmark for the financial industry's future.

Data Availability Statement

Data will be made available on request.

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Conflicts of Interest

Raja Vavekanand is an employee of Datalink Research and Technology Lab, Islamkot 69240, Sindh, Pakistan.

Ethical Approval and Consent to Participate

Not applicable.

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Madiha is doing MBA-Business Informatics from Metropolia University of Applied Sciences, Finland. Previously, she has done Master of Business Information Technology with major in Finance from University of the Punjab, Pakistan. She has 11 years of diverse work experience in the health and financial sectors. Her research interests include digital transformation, AI and innovative management. (Email: madiha@metropolia.fi)

Kira Sam , a recent graduate with a Bachelor of Science in Computer Science from the University of Salento, Italy, is a dedicated technology professional with expertise in software development, machine learning, and cybersecurity. With experience in teaching, research, and project management, Kira is proficient in multiple programming languages and tools, and is committed to continuous learning and innovation. Her research interests lie in machine learning, deep learning, image and video processing. (Email: p0348030@studenti.unisalento.it)

Sanjay Kumar , a recent graduate in Business Administration from the University of Sindh, is a visionary and multidisciplinary researcher driven by a passion for harnessing the power of artificial intelligence (AI) in finance, deep learning, financial markets, and fintech innovations. With a robust academic foundation, Sanjay has authored several seminal research papers that delve into the intersections of finance, technology, and AI. He is now eager to translate his research expertise into real-world applications, fostering innovative solutions that transform the financial landscape. (Email: sanjaikumarnijar@gmail.com)

Raja Vavekanand received a Bachelor's degree in Information Technology from Benazir Bhutto Shaheed University, Karachi, Pakistan in 2024. He has completed different research projects based on IoT, deep learning, and image processing. His research interests include generative AI, machine learning, medical imaging and computer vision. (Email: bharwanivk@outlook.com)