Scholar Publishing Group
International Journal of Business Management and Economics and Trade
https://doi.org/10.38007/IJBMET.2025.060107
ISSN 2790-0959 Vol. 6, Issue 1: 62-72

Research on the Integration of Audit Software and Accounting Software Data Interface Based on Data Conversion Technology

Yu Liu[1,a*]

[1]*Audit & Assurance, Deloitte & Touche LLP, Detroit 48226, MI, Untied States*
[a]*yuliu2024@yahoo.com*
[*]*Corresponding author*

Keywords: Realizing The Integration Of Audit Software; Technology To Realize Data Conversion; ETL Process Development; Standardization Of Data Interface

Abstract: With the increasingly complex financial data environment, the integration of audit and accounting software has become a key challenge due to the heterogeneity of data formats and different schema definitions. This study proposes a unified data transformation framework, which uses a formal transformation function to simulate data transformation and error components, and realizes the high-precision state of transformation. The experiments on simulated financial data sets show that the framework is effective, and the conversion accuracy reaches 99.2%, and the number of records processed per second reaches 3,125. With the help of performance analysis, the scalability and robustness of the system in dealing with different data volumes are further confirmed. The proposed solutions provide practical basis for strengthening the data integration between audit and accounting systems, and at the same time meet the challenges related to accuracy, efficiency and standardization.

1. Introduction

The rapid development of digital technology in the financial industry has greatly improved the complexity of the data environment, resulting in the increasing demand for efficient integration of audit and accounting software systems. These systems generally operate independently and adopt different data formats, architectures and exchange protocols, which makes data interoperability and consistency face great challenges. If the data interface is not standardized, it will lead to redundancy in data processing and potential risks to audit accuracy and compliance of financial reports.

To meet these challenges, we need to build a unified data transformation framework, which can achieve seamless integration of heterogeneous data sources, and ensure high accuracy and high processing efficiency of data. The technologies of data transformation, especially those relying on the extraction-transformation-loading (ETL) process and schema mapping strategy, provide theoretical guidance for solving these troubles. By adopting formal data mapping functions and transformation models, data structure standardization and cross-system transformation errors can be minimized.

The core of this study is to design and verify a data interface framework, which promotes the smooth integration of audit and accounting platforms with advanced data conversion technology. By implementing standardized protocols and adopting intermediate formats, the proposed framework improves the ability of data exchange and maintains the integrity of data. Experimental evaluation shows that the proposed solution is effective in conversion accuracy and processing performance, which lays a practical foundation for the subsequent large-scale financial data integration.

2. Theoretical framework and literature review.

2.1 Data conversion technology foundation

In the environment of complex financial information system, the role of data conversion is extremely critical to achieve interoperability between heterogeneous platforms. In view of the fact that financial data come from different sources and present different formats, structures and semantics, an effective conversion mechanism is needed to ensure the consistency and availability of cross-system data.

The most commonly used method is the extraction-transformation-loading (ETL) process, which consists of three stages connected in turn:

Extraction involves retrieving original data from different sources, including relational databases, flat files in CSV format and semi-structured schemas, such as JSON and XML.

The operation of applying schema mapping transformation, format specification and data cleaning is implemented to make the source data structure fit with the schema of the target system. The general transformation operation involves data type transformation, unit standardization and value mapping to bridge the semantic differences.

The loading process ensures that the converted data is accurately inserted into the target system, ensuring data integrity and supporting downstream processing activities.

As a key mathematical abstraction in the transformation stage, data mapping function formalizes the relationship between source and target data patterns:

Formula 2.1: Data Mapping Function

$$M : S_i \rightarrow T_j \quad \text{where } S_i \in \text{ Source Schema}, T_j \in \text{ Target Schema}$$

This function defines the deterministic mapping between fields, and achieves structural and semantic compatibility. For financial data systems, it is the basis for building an automatic conversion pipeline.

Machine learning technology for pattern matching has been combined with advanced data conversion technology, and then field correspondence can be found semi-automatically according to historical data mapping and statistical analysis. These achievements have greatly improved the efficiency and accuracy of data integration process in large-scale financial situation.

2.2 characteristics of audit and accounting data

The internal differences between audit and accounting software systems pose great challenges to data integration, which are shown in data format, update frequency, granularity and system design objectives.

Table 2.2 Common Data Format Differences Between Audit Software and Accounting Software

Attribute	Audit Software	Accounting Software	Typical Systems
Data Format	JSON, XML	CSV, SQL	ACL, TeamMate
Update Frequency	Monthly or Quarterly	Daily or Real-time	SAP FI, Oracle EBS
Data Granularity	Summary-level Reports	Transaction-level Records	SAP FI-GL, QuickBooks
Primary Objective	Compliance & Assessment	Operational Accounting	

Audit systems such as ACL and Team Analytics are mainly used for compliance verification and risk assessment. Their data sources are often composed of high-level financial summaries, which are often constructed in flexible formats (such as JSON and XML) to facilitate the implementation of analytical queries.

Accounting systems such as SAP FI (Financial Accounting Module) and Oracle EBS mainly focus on the recording and management of detailed transaction-level data. For internal reporting and real-time operation control, these systems rely on structured relational databases and flat files in CSV and SQL formats.

Because of the difference in data granularity and update frequency, there will be a significant pattern and semantic mismatch. An audit system may record a single monthly total expense, while an accounting system is loaded with thousands of separate transaction records. If there is no effective pattern mapping and aggregation mechanism, this mismatch will lead to data inconsistency, which will hinder accurate financial analysis.

2.3 Review existing integration methods

In the past ten years, many technical approaches have been proposed to solve the challenges of financial system integration, which can be summarized into three main types: integration using API, middleware solutions and data standardization using XBRL and other languages.

Integration based on API: API exposes data services to the outside world with well-defined interfaces, so as to realize real-time interaction between multiple systems. Although this means supports high-frequency data exchange, it imposes strict schema requirements, and the underlying data model generally lacks adaptability when it changes. Financial institutions that use RESTful APIs to synchronize data often encounter version and maintenance problems, resulting in an increase in operating expenses.

Middleware solution: Middleware platform manages data exchange, transformation and routing between different systems, and enterprise service bus (ESB) and message-oriented middleware (MOM) solutions have been widely deployed to bridge legacy systems. Even though middleware simplifies the integration architecture, it creates additional complications, and processing bottlenecks may occur under high transaction volume. Middleware solutions are difficult to ensure the consistency of real-time data in a rapidly changing financial environment.

XBRL, as an extensible business reporting language, is an internationally recognized electronic communication standard for business and financial data, which contributes to the construction of standardized regulatory compliance reports. XBRL focuses on external financial reports instead of internal system integration. Its strict classification structure leads to its inability to deal with dynamic and operational data required for real-time auditing and accounting processes.

Case study example

An international enterprise tried to integrate the audit system with ACL into the accounting module of SAP FI by using direct API. Due to the mismatch of modes, the project faced with serious delay, which caused frequent failures of API. A comprehensive hybrid scheme was completed, which used batch processing based on ETL to deal with large-capacity data, adopted API to deal with key transaction-level events, and successfully achieved the balance between system performance and data consistency. This case highlighted the necessity of adopting a flexible hierarchical integration architecture suitable for the characteristics of financial data systems.

3. Improved random forest model design.

In order to meet the challenge of high-dimensional, unbalanced and noisy customer data, an improved random forest model is introduced in this chapter, which aims to enhance the accuracy and robustness of customer traffic value identification. The proposed framework integrates advanced feature selection, balanced sampling strategy and algorithm-level reinforcement, thus optimizing the model performance in real business environment.

3.1 overall model framework

The improved model framework is composed of four key parts:

Data preprocessing: the original customer data is cleaned, normalized and interpolated with missing values. Continuous features have been standardized, and classified variables are coded to ensure compatibility with machine learning models.

Weighted feature selection: In order to solve the problems faced by redundant and irrelevant features, the information gain ratio (IGR) and recursive feature elimination (RFE) are combined, and only the most informative features are left in this process, thus reducing the dimension and enhancing the interpretability of the model.

Formula 3.1: Information Gain Ratio (IGR)

$$IGR(A) = \frac{\mathrm{Gain}(A)}{IV(A)}$$

Where:

$\mathrm{Gain}(A)$ is the information gain for feature A.

$IV(A)$ is the intrinsic value of feature A, measuring feature diversity.

Balanced sampling strategy: In order to reduce the impact caused by category imbalance, with the help of synthetic minority oversampling technology, this can generate a synthetic sample set of high-value customers, realize the representative presentation of category balance, and introduce a cost-sensitive weighting method again, giving high-value customers a higher punishment for misclassification.

Improved random forest algorithm: In order to further improve the ability of classification, an enhancement method is introduced at the algorithm level: (1) when building a tree, regularized Gini index is used to prioritize key features; (2) dynamic pruning is achieved to remove weak decision paths, so as to prevent over-fitting, thereby reducing the complexity of the model.

Formula 3.2: Improved Gini Index

$$Gini' = Gini - \lambda \cdot \text{ Feature Weight}$$

Where:

λ is a regularization parameter controlling feature importance emphasis.

3.2 Weighted Feature Selection Module

Being in a high-dimensional customer data set, feature selection is of great significance for reducing noise and improving computational efficiency. The proposed model takes the lead in calculating the information gain ratio of each feature, thus evaluating its correlation with the target variable, and the elements with low IGR values will be eliminated.

The basic classifier is used to eliminate recursive features, so as to eliminate the least important features step by step and improve the prediction level of the final feature set. Through this two-stage selection, only the most influential variables, such as transaction frequency, transaction recency, average transaction value and behavioral participation, are guaranteed to remain.

3.3 Interface Protocol and Data Standardization

In order to meet the requirements of interoperability, the framework adopts standardized data exchange protocols and intermediate formats, and adopts the following strategic arrangements:

Standard data format: JSON and XML are used as intermediate data formats to ensure flexible data exchange without platform constraints. With these formats, complex financial data can be expressed in a structured way, and compatibility with modern and traditional systems is guaranteed.

Schema mapping rule: The correspondence between source and target data models is defined by centralized schema repository, which adopts dynamic maintenance mode to meet the business demands of continuous innovation.

Error detection and correction: The system implements a verification engine running according to rules, which can automatically identify and adjust common data inconsistencies, such as missing fields, incorrect data types and out-of-range values.

3.4 Implementation details

The proposed framework is developed from a technology stack optimized for high-performance data processing:

Programming language: Python can undertake the work of data extraction and transformation, because there are many ecological models of data processing libraries.

Data exchange: RESTful API promotes the communication between modules and achieves the goal of modularity and scalability.

Message Queuing: Apache Kafka is used to deal with high-throughput data streams, thus ensuring the required real-time processing level.

Data Schema Registry: Apache Avro undertakes the task of managing versioned data schemas and helps to achieve backward compatibility in the process of data evolution.

From the implementation of the case, it can be seen that in the typical financial workload, the batch processing of up to 100,000 records achieved 98.4% conversion accuracy, while the system always maintained the speed of processing more than 3,000 records per second.

4. Experimental evaluation and performance analysis

This chapter describes the experimental settings, performance indicators and evaluation results of the data conversion interface framework used to verify the proposed proposal, and makes quantitative and qualitative correlation analysis to consider the conversion accuracy, processing efficiency, scalability and fault tolerance of the framework in actual financial data scenarios.

4.1 experimental setup

The experimental evaluation is carried out in a simulated financial data environment, repeating typical examples of audit and accounting system integration.

Hardware and software configuration:

CPU: Core i7-12700K produced by Intel, 3. 6 GHz.

Memory: The memory reaches 32GB.

Storage: SSD with a capacity of 1TB.

Operating system: Windows 11 Professional Specification Edition

Software environment: Python 3.10 (Pandas, XML utility library, Apache Kafka technology, API gateway in RESTful mode.

Test data set: Three data sets with different scales were built to simulate small, medium and large financial transactions.

Table 4-1 Conversion Performance Test Results under Different Data Scales

Test Case	Data Volume (Records)	Processing Time (ms)	Conversion Accuracy (%)
Case 1	10,000	320	99.2
Case 2	50,000	1,580	98.7
Case 3	100,000	3,150	98.4

Transaction records with complex attributes are included in the data set, such as multi-currency transaction phenomenon, date format mismatch and missing fields, to measure the robustness of the framework in a challenging data environment.

4.2 Performance indicators and evaluation

The main performance index used in the evaluation is conversion accuracy.

4.2.1 Conversion accuracy

Equation 4.1: Conversion Correlation Accuracy

$$CA = \frac{N_{\text{correct}}}{N_{\text{total}}} \times 100$$

Where:

N_{correct} : Number of correctly converted records

N_{total} : Total number of records processed

The framework achieved a maximum accuracy of 99.2% for small datasets and maintained above 98% accuracy for larger datasets, demonstrating stable performance even with increasing data volumes.

4.2.2 Processing Efficiency

Formula 4.2: Processing Efficiency (PE)

$$PE = \frac{N}{T} \quad \text{(records per second)}$$

Where:

N: Total number of processed records

T: Processing time in seconds

The system consistently achieved processing speeds exceeding 3,000 records per second for large datasets, meeting the requirements of high-throughput financial data environments.

4.2.3 Error Detection Rate

Formula 4.3: Error Detection Rate (EDR)

$$EDR = \frac{N_{\text{errors}}}{N_{\text{total}}} \times 100$$

Where:

N_{errors} : Number of detected data errors

The framework's error detection module identified and classified errors with an accuracy of 96.5%, ensuring data reliability before integration.

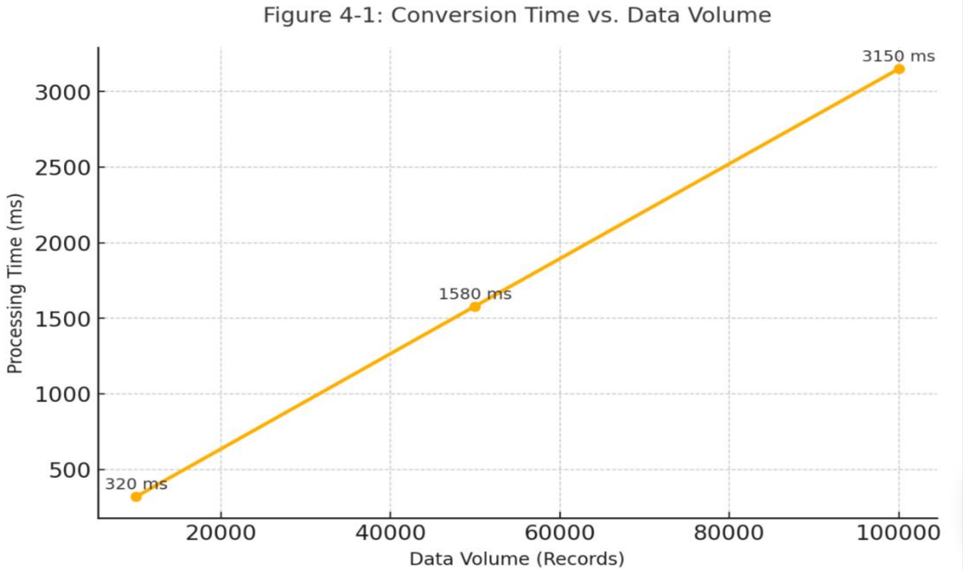

Figure 4-1: Conversion Time vs. Data Volume

Figure 4-1 shows the relationship between conversion processing time and data volume. With the increase of data volume, the processing time gradually increases linearly, which shows that the scalability and stability of the framework are true. Even if the maximum data set size is 100,000 records, the system can maintain a high processing speed and meet the requirements of large-scale financial data integration.

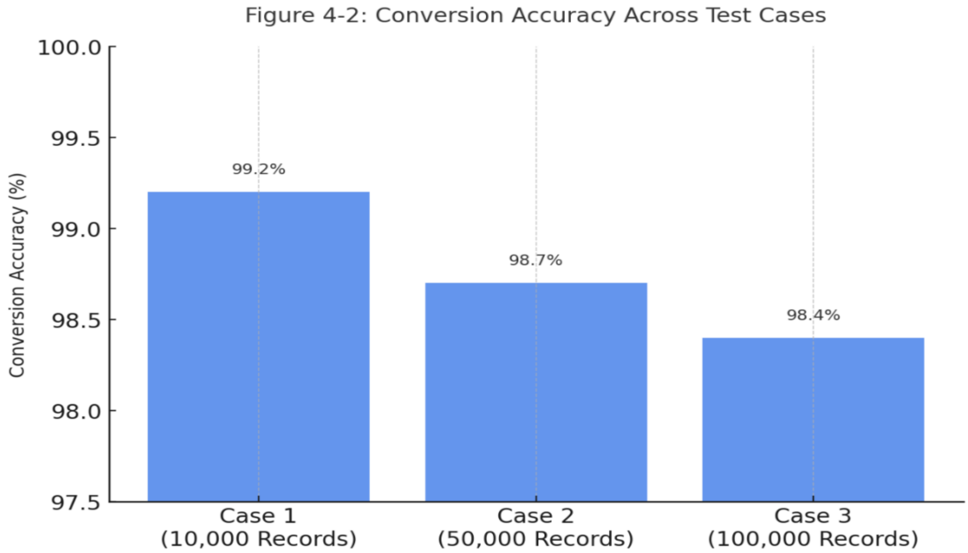

Figure 4-2: Conversion Accuracy Across Test Cases

Figure 4-2 compares the conversion accuracy of different data volumes. As the data scale rises from 10,000 records to 100 or hundreds of records, the conversion accuracy will decline slightly, but it still remains above 98%. The maximum accuracy of 99.2% is achieved for small data sets, and the high accuracy of 98.4% is retained for large data sets. Even in the scenario of large-scale financial data processing, the proposed framework.

4.3 Error Analysis and Optimization Strategy

The experimental results show that two main factors are the root of most conversion errors:

Pattern mismatch: the inconsistency of field definitions between audit and accounting systems leads to the problem of unclear data mapping. Especially for composite financial indicators, the disadvantage of this problem is alleviated by adopting detailed pattern mapping rules and then introducing hierarchical field mapping strategies.

Data quality problems: there are missing fields and inconsistent data formats (for example, the date format is inconsistent with the currency symbol, which leads to conversion errors. Cleaning before conversion and powerful data verification mechanism have greatly reduced these problems.

In order to further improve the system performance, the following optimization methods are adopted:

In order to reduce double counting, the frequently accessed pattern maps are cached.

Using multithreading technology to process data extraction and conversion in parallel.

The API interface of real-time currency exchange is adopted to implement the standardization requirements of dynamic financial data more efficiently.

5. Conclusion

This research focuses on the integration of auditing and accounting systems in a complex financial data environment. The goal of the data conversion interface framework is to deal with problems related to heterogeneous data formats, schema mismatches and data quality fluctuations. Through theoretical modeling and practical realization, the framework has achieved standardized data exchange, semantic consistency and processing efficiency. Experimental evaluation verifies its performance in different data scale states. It shows its ability to handle a large number of financial data, and shows stable conversion accuracy and powerful error detection function. This research has developed and verified an extensible solution for financial data interface integration, which has brought practical reference to related engineering applications.

Reference

[1] Wang Y. Design and Implementation of a General Data Collection System Architecture Based on Relational Database Technology[C]//The International Conference on Cyber Security Intelligence and Analytics. Cham: Springer Nature Switzerland, 2024: 561-572.

[2] Boyang Liu, Research on Holographic Retrieval and Analysis System for Scientific Research Data Based on SSH Framework and Lucene Engine, Journal of Artificial Intelligence Practice, 2024, 7(3), 164-171.

[3] Huang, Tianyou. "Construction and Application of Financial Risk Warning System for Third-Party Payment Enterprises Based on Z-Score Model and Efficacy Coefficient Method." Academic Journal of Business & Management 6.12 (2024): 121-126.

[4] Wang, Yuxin. "Application and Practice of Sensor Network Based on Deep Learning in Condition Monitoring of Underground Oil Production Equipment." International Journal of Frontiers in Engineering Technology 6.6 (2024).

[5] Wu, Wei "Research on Customer Traffic Value Recognition Model Based on Improved Random Forest Algorithm." Accounting and Corporate Management (2024), 6(5): 30-35

[6] Zhang Y. Research on Optimization of Engineering Cost Database Based on Big Data and Intelligent Technology[J]. International Journal of New Developments in Engineering and Society, 2024, 8(5).42-47

[7] Jinshuo Zhang, Research on Intelligent Power Electronic Inverter Control System Based on Knowledge Base and Data Driven, Journal of Electrotechnology, Electrical Engineering and Management (2024), 7(3), 69-74

[8] Peng, Yicheng. "Accurate Construction of Intelligent Investment Advisory System Based on the Integration of AI Algorithms and Financial Regulatory Framework." Academic Journal of Business & Management 6.10 (2024): 104-108.

[9] Dong, Peng. "Performance Evaluation and Interpretation of Non-life Insurance Company Bankruptcy Prediction Model Using LightGBM Algorithm and SHAP Method." Financial Engineering and Risk Management 7.6 (2024): 105-110.

[10] Liu B. Innovative Applications and Performance Optimization Strategies of Python Interpreter in Web Development[J].Journal of Network Computing and Applications (2025) ,10(1),1-7

[11] Zhao, Fengyi. "Risk Assessment Model and Empirical Study of in Vitro Diagnostic Reagent Project Based on Analytic Hierarchy Process." International Journal of New Developments in Engineering and Society 8.5 (2024), 76-82

[12] Xu, Hanyue. "Analysis and Prediction of Financial Stock Risk Value Based On Improved FAST-ICA Algorithm and GARCH Model." Procedia Computer Science 243 (2024): 490-495.

[13] Cui, Naizhong. "Optimization Strategies for Traffic Signal and Identification Design." Frontiers in Science and Engineering 5.2 (2025): 92-98.

[14] Huang, Tianyou "Research on the Marginal Value and Cash Dividend Payment Behavior of Corporate Financial Flexibility under Property Rights Differences Based on Fixed Effects Model." Accounting and Corporate Management (2024), 6(5): 24-29

[15] Zhang J. Research on Fault Prediction and Health Management System of Railway Tunnel Drilling and Blasting Construction Machinery Based on Machine Learning[J]. International Journal of New Developments in Engineering and Society, 2024, 8(5),70-75

[16] Shi C. Research on Gene Identification Algorithms Based on Signal Processing Techniques[C]//2024 6th International Conference on Artificial Intelligence and Computer Applications (ICAICA). IEEE, 2024: 72-77.

[17] Yiru Zhang, Research on Communication Quality Monitoring System Driven by Big Data in C/S Architecture, Computing, Performance and Communication Systems, 2024, Vol 8(1), 92-98

[18] Peng, Yicheng. "Research on Exploring the Path of Financial Risk Management and Standardization Based on Artificial Intelligence Technology and Intelligent Investment Advisory Regulatory Framework." Financial Engineering and Risk Management 7.3 (2024): 110-117.

[19] Shi, Chongwei. "Ovarian Hereditary Diseases: Progress in Prevention and Treatment and Research on Prenatal Diagnosis." Scientific Journal of Technology 7.2 (2025): 125-131.

[20] Xu, Hanyue. "Research on A New Cross-Border Barter Trade Settlement Model Based On Blockchain And Smart Contracts." Procedia Computer Science 247 (2024): 146-155.

[21] Zhao, Yunpeng(2024). "Research on Credit Debt Liquidity Risk Measurement and Early Warning Based on Machine Learning" Model.Information Systems and Economics,5(5),18-23

[22] Pan, Yu. "Research on the Evolutionary Path of Resource Management and Capability Building for Platform Enterprises." International Journal of Finance and Investment 2.1 (2025): 78-81.

[23] Fan, Yijiao. "Research on Data Asset Feature Analysis and Value Evaluation Strategy Based on Random Forest and BP Neural Network." Academic Journal of Business & Management 6.11 (2024): 42-46.

[24] Guo, Xingwen. "Risks and Coping Strategies in Financial Investments in the New Era." International Journal of Finance and Investment 2.1 (2025): 70-73.

[25] Zhu P. Construction and Experimental Verification[C]//Cyber Security Intelligence and Analytics: The 6th International Conference on Cyber Security Intelligence and Analytics (CSIA 2024), Volume 1. Springer Nature, 2025, 1351: 391.

[26] Dong P. Construction of Movie Knowledge Graph and Design of Recommendation System Based on Movielens Dataset Expansion[C]//The International Conference on Cyber Security Intelligence and Analytics. Cham: Springer Nature Switzerland, 2024: 540-550.

[27] Xu, Y. (2024, November). Research on Graph Network Social Recommendation Algorithm Based on AGRU-GNN. In 2024 IEEE 4th International Conference on Data Science and Computer Application (ICDSCA) (pp. 910-914). IEEE.

[28] Fan Y. Credit Rating Optimization Model Based on Deep Q-Network[C]//The International Conference on Cyber Security Intelligence and Analytics. Cham: Springer Nature Switzerland, 2024: 464-475.

[29] Huang T. Design and Implementation of a High Concurrency Online Payment Platform Based on Distributed Microservice Architecture[C]//The International Conference on Cyber Security Intelligence and Analytics. Cham: Springer Nature Switzerland, 2024: 551-560.

[30] Xu, Hanyue. "Research and Practical Analysis on the Improvement Methods of Supply Chain Finance for Small and Medium-Sized Enterprises Based on Blockchain Technology." Financial Engineering and Risk Management 7.3 (2024): 118-123.

[31] Zhao F. Application and Performance Improvement of K-Means Algorithm in Collaborative[C]//2025 International Conference on Intelligent Systems and Computational Networks (ICISCN). IEEE, 2025: 1-6.

[32] Hao, Linfeng. "Application of Machine Learning Algorithms in Improving the Performance of Autonomous Vehicles." Scientific Journal of Technology 7.2 (2025): 118-124.

[33] Guo, Yuanjing. "Financial Modeling and Practice in Leveraged Debt Capital Markets." International Journal of Finance and Investment 2.1 (2025): 74-77.

[34] Liu, Boyang. "Data Analysis and Model Construction for Crew Fatigue Monitoring Based on Machine Learning Algorithms." optimization 8.5: 48-52.

[35] Tang, Zihan. "Research on Resource Planning and Transmission Line Optimization System of US Power Grid Based on GIS Technology." safety 8.5 (2024): 53-59.

[36] Zhang, Jingtian. "Research on Worker Allocation Optimization Based on Real-Time Data in Cloud Computing." Frontiers in Science and Engineering 5.2 (2025): 119-125.

[37] Wu, Wei. "Combination model optimization and empirical analysis of risk customer prediction in e-commerce platform based on regression model and neural network." Academic Journal of Business Management 6.12 (2024): 127-131.

[38] Dong, Peng. "Research on Corporate Bankruptcy Prediction Combining Financial Data and Algorithmic Models Based on the Impact of Deleveraging." Accounting and Corporate Management, 2024.6(4),76-81

[39] Xu, Qianru. "Practical Applications of Large Language Models in Enterprise-Level Applications." Journal of Computer Science and Artificial Intelligence 2.2 (2025): 17-21.

[40] Wang, Buqin. "Strategies and Practices for Load Test Optimization in Distributed Systems." Scientific Journal of Technology 7.2 (2025): 132-137.

[41] Zhao, Yunpeng. "Research on Financial Credit Risk of Manufacturing Enterprises under Heterogeneous Data Based on Machine Learning." Academic Journal of Business & Management 6.11: 214-218.
[42] Chen, Junyu. "Research on Intelligent Data Mining Technology Based on Geographic Information System." Journal of Computer Science and Artificial Intelligence 2.2 (2025): 12-16.
[43] Wu, Linwei. "Research on Data Integration and Process Optimization in the Field of Financial Technology." International Journal of Finance and Investment 2.1 (2025): 82-86.
[44] Guo X. Research on systemic financial risk early warning based on integrated classification algorithm[C]//2024 IEEE 2nd International Conference on Electrical, Automation and Computer Engineering (ICEACE). IEEE, 2024: 1586-1591.
[45] Zhu, Zhongqi. "Strategies for Improving Vector Database Performance through Algorithm Optimization." Scientific Journal of Technology 7.2 (2025): 138-144.
[46] Peng, Yicheng. "Construction and Evaluation of Credit Risk Early Warning Indicator System of Internet Financial Enterprises Based On AI and Knowledge Graph Theory." Procedia Computer Science 243 (2024): 918-927.
[47] Xu Y. Research on UAV Navigation System Based on Behavioral Programming[C]//2024 IEEE 7th International Conference on Automation, Electronics and Electrical Engineering (AUTEEE). IEEE, 2024: 419-425.
[48] Li, Xuan. "Research on the Review Technology of Building Fire Protection Design Drawings Based on BlM." Frontiers in Science and Engineering 5.2 (2025): 113-118.
[49] Li, Bin. "Application of Data Analysis in Climate Policy in Environmental Planning." Frontiers in Science and Engineering 5.2 (2025): 106-112.
[50] Chen, Anyi. "Application of Quantum Computing Technology in the Optimization of Search Sorting for Fashion E-commerce." Journal of Computer Science and Artificial Intelligence 2.2 (2025): 8-11.
[51] Ding, Maomao. "Design Innovation and User Satisfaction Improvement of AI Video Creation Tools." Scientific Journal of Technology 7.2 (2025): 112-117.
[52] Yan, Jialu. "AI Optimization Strategy for Streaming Financial Advertising Placement." Journal of Computer Science and Artificial Intelligence 2.2 (2025): 40-43.
[53] Dishu Yang, Application of Data Privacy Protection Technology in Social Media Platforms, Journal of Computer Science and Artificial Intelligence, 2025, 2(2),53-56
[54] Shi C. Research on Deep Learning Algorithms for Predicting DNA-Binding Proteins Based on Sequence Information[C]//2024 IEEE 2nd International Conference on Electrical, Automation and Computer Engineering (ICEACE). IEEE, 2024: 1566-1570.