

# Value Orientation and Framework of the Basic Institutional System for Data Elements

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## Abstract

In the digital economy era, data elements have become critical factors of production and fundamental national strategic resources. The full realization of data value constitutes the core factor through which data elements empower high-quality economic development. This paper first investigates the problems in the data element valorization process, then analyzes the value orientation of foundational data element institutions, and finally systematically elaborates on the framework and content of these institutions.

## Full Text

## Preamble

## Value Orientation and Framework of Data Element Foundation System

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## Abstract

In the era of digital economy, data elements have become key factors of production and national basic strategic resources. The full release of the value of data is the core factor for data elements to empower high-quality economic development. This paper firstly explores the problems in the process of valorization of data elements, secondly analyzes the value orientation of the data element foundation system, and finally systematically discusses the framework and content of the data element foundation system on this basis.

**Keywords:** Data Elements; Data Elements Foundation System; Value Proposition

In April 2020, the Central Committee of the Communist Party of China and the State Council issued the “Opinions on Constructing a More Perfect Market-oriented Allocation System and Mechanism for Factors of Production,” which officially listed data alongside land, capital, technology, and labor as factors of production, marking the formal establishment of data as a new production factor. In the agricultural era, land and labor were the key factors of production; in the industrial era, capital and technology rose to become important factors; and in the digital economy era, data has ascended to become the core factor of society. Data is driving the digitalization and intelligent transformation of production, operation, and services in traditional sectors, injecting new momentum into digital economic development. As the “oil” fueling the rapid growth of the digital economy, data contains enormous social and economic value, attracting increasing attention from governments and enterprises worldwide. Consequently, how to fully unleash the value of data elements has become a critical proposition. However, China’s current data element valorization still faces challenges in data rights confirmation, data value assessment, data trading, data pricing, and data profit distribution, urgently necessitating a comprehensive data element foundation system to promote the development of data element markets.

## 1.1 Data Element Value Chain

Production factors are resources, but not all resources are production factors. Only when data is combined with a series of labor activities—including collection, storage, processing, analysis, and application—to create value, realize value, and achieve value multiplication can data fully play its role and be called a factor of production. The data element value chain demonstrates the complete process of data element valorization, presenting a comprehensive “four modernizations” process [1] (as shown in [Figure 1: see original paper]): data resource-ization → data asset-ization → data commodification → data capitalization.

[Figure 1: see original paper] Data Element Value Chain

Data resource-ization involves the acquisition of raw data and its subsequent processing and organization, serving as the prerequisite for value release. Data asset-ization refers to the process where data resources with potential value integrate across domains and combine with product production processes to participate in value creation, thereby realizing the assetization of data resources. Data commodification means that data assets with use value and value form data commodities through circulation and exchange in the market, fully tapping into the exchange value of data to realize data value. Data capitalization, building upon data asset trading and circulation, further leverages the financial attributes of data to achieve value appreciation.

## 1.2 Problems in Data Element Valorization

The “four modernizations” process of data as a new factor of production in the digital economy era faces numerous unresolved issues. (1) Problems in

data resource-ization. China is extremely rich in data resources, accounting for 23% of global data volume in 2021. As information technology becomes more widely applied in the future, China's data resource advantages will become even more prominent. However, in both internet services and industrial sectors, data resource-ization still faces many difficulties, such as uneven data quality [4], mismatches between different datasets, and lack of mutual recognition [5] caused by technical limitations, poor IT infrastructure, and closed equipment interfaces [3].

- (2) Problems in data asset-ization. Data asset-ization manifests when data elements, through flow and allocation, combine with other factors in actual production operations to guide business efficiency improvements and production structure transformation. In this process, data elements closely integrate with various other production factors to generate economic value through coordinated application [6]. Data asset-ization marks the transformation from virtual resource management to value-based asset management, yet the current data asset management system still needs to further clarify the determination and protection of data property rights [7].
- (3) Problems in data commodification. The biggest difference between data commodities and data assets lies in whether they are exchanged in the market. The exchange segment must fully exploit and infinitely amplify the exchange value of data to capture more surplus value. Data product pricing forms the basis of data product exchange, yet data product pricing is constrained by numerous factors such as data quantity, data quality, and transaction timing, making it difficult to draw on existing product pricing models and necessitating the formulation of specialized market-oriented pricing mechanisms [8].
- (4) Problems in data capitalization. Data capitalization refers to the process where data assets enter capital market circulation. The essence of data capitalization is to activate data elements through market transactions and financial innovation, continuously transforming the form and value of data elements to achieve value appreciation [9]. Data capitalization currently faces multiple challenges, such as unresolved legal compliance issues in data circulation and trading [10] and unreasonable profit distribution of data elements [11].

## 2 Value Orientation of Data Element Foundation System

Achieving data element valorization is the core objective of digital economic development. However, China's current data element valorization process faces urgent problems including data rights confirmation, data value assessment, data trading, data pricing, and data profit distribution, which hinder the full release of data element value and necessitate a comprehensive institutional system to ensure smooth progress in all aspects of data element valorization. Value orientation constitutes the direction and goal of the entire data element foundation

system, providing a unified standard for its establishment. Therefore, before designing the data element foundation system, it is essential to clarify the value orientation that the system should embody, as only on this basis can the fundamental direction for institutional design be determined.

This paper employs grounded theory and uses literature coding analysis to explore the value orientation of the data element foundation system. The specific process is as follows: Literature collection: Using “data element system” as the keyword, we retrieved literature related to data element system design from CNKI and obtained 20 papers after manual screening. Literature coding: We used Nvivo12 to conduct hierarchical coding of the collected literature. First, we performed initial coding to extract phrases related to institutional value orientation that appeared in the literature. Second, we conducted axial coding to categorize and aggregate the initial coding results. Finally, we further clustered the axial coding results to obtain three major thematic codes of value orientation: fairness, efficiency, and rights protection.

## 2.1 Fairness

The fairness value orientation of the data element foundation system mainly includes two aspects. First is fair profit distribution. This “fairness” is a differential fairness rather than egalitarianism, referring to equal opportunities for relevant property rights subjects to obtain remuneration for data property rights. Specifically, data subjects can fully exercise the property rights functions within their defined data property rights boundaries. If a data subject crosses property boundaries without permission or legal authorization, it constitutes an infringement requiring corresponding liability. This differential fairness can both protect the achievements created by data subjects and stimulate their enthusiasm for continued wealth creation, promoting the circulation and utilization of data elements to activate data trading markets [12].

Second is fairness in data transactions. While data property rights holders enjoy freedom over their data information, they must be constrained by the principle of data transaction fairness. Current practices frequently witness data monopolies, placing transaction parties in unequal positions during data transactions. Specifically, platform enterprises with absolute market competitive advantages hold large amounts of data resources yet refuse to open data to other entities, raising the barrier to market entry for other operators and seriously disrupting the market competition environment. Therefore, an efficient and standardized data sharing and opening system must be formulated to promote data openness and circulation, prevent various data monopoly risks, and ensure equal data sharing opportunities for all types of transaction entities [13].

## 2.2 Efficiency

The efficiency value orientation of the data element foundation system mainly includes two aspects. First is the efficiency of the property rights system. In-

coherence between different systems and the data property rights system leads to blurred boundaries of data property rights, causing incompatibility between property rights functions of different data subjects and creating significant obstacles to the normal operation of data trading markets [14]. Therefore, the data property rights system must emphasize coupling and coordination with related systems to avoid blurred property rights boundaries and improve overall efficiency of the data property rights system.

Second is the efficiency of data transactions. The current data trading market has not yet formed unified and standardized trading rules, with prominent issues in data pricing and security leading to increased transaction costs and difficulties in conducting efficient, convenient, and secure data trading activities [15]. Therefore, data element trading and circulation require the formulation of unified trading principles to enhance data transaction efficiency.

### 2.3 Rights Protection

The rights protection value orientation of the data element foundation system mainly includes two aspects. First is the full protection of rights and interests of data circulation participants. Since data information carries the interests of different subjects, if the rights and obligations boundaries of data providers and data recipients are vague during data transactions, conflicts of interest between different subjects may arise, making it difficult for data transaction and circulation models to gain trust from relevant parties [16].

Second is the full protection of rights and interests of data circulation-related parties. After data rights are confirmed and data enters the market for trading and circulation, it involves multiple interests including personal information protection, business secret protection, and public safety. Without relevant regulatory constraints, data leaks will have strong negative impacts on data circulation-related parties once they occur [17].

## 3 Framework and Content of Data Element Foundation System

After fully considering the problems existing in the data element valorization process and based on the value orientation of the data element foundation system, we can construct a data element foundation system framework from six aspects: data open sharing system, data property rights system, data pricing system, data element circulation and trading system, data element profit distribution system, and data element security governance system (as shown in [Figure 2: see original paper]).

[Figure 2: see original paper] Framework of Data Element Foundation System

### 3.1 Data Open Sharing System

Data open sharing is the prerequisite for high-quality data aggregation and the foundation of data resource-ization. Currently, data open sharing faces practical problems such as independent business systems, inconsistent data standards and calibers, and difficulties in data integration. To address these issues, we propose the following recommendations.

- (1) Formulate data interoperability standards and industry norms. Existing API technical architectures and specifications of different data open platforms show significant differences, while some dominant platforms close their APIs to maintain market position, creating serious obstacles to data open sharing. Therefore, it is necessary to construct data interoperability standards, promote industry organizations to establish technical standards for industry data open sharing, formulate formatted contracts and data access licensing terms for industry data open sharing, and establish relevant norms for data access and usage [18].
- (2) Establish unified standards and norms for data open sharing. Clarify technical and management standards for open data, while establishing and improving government open data sharing mechanisms, strengthening inter-departmental coordination, pursuing goal-oriented and demand-based sharing, standardizing the construction process, ensuring the quality of shared data, and guaranteeing data sharing security. On the other hand, clarify data sharing agreements during the data sharing process, specifying what data to share, reasons and methods for sharing, access rights, risk control, and liability assumption to provide comprehensive protection for shareable data [19].
- (3) Establish a comprehensive open data inventory. Create a government open data inventory containing both positive and negative lists. The procedures for establishing these lists should be open, scientific, and democratic. The positive list should specify all disclosure elements including content standards, disclosure methods, and time limits for open data, eliminating gray areas in data openness. Annually record and analyze user data applications to comprehensively expand the positive list, providing users with data across more fields and broader scopes. Establish a negative list specifying what data is not open, clarifying forbidden zones for data openness. After establishment, these lists should be appropriately adjusted and supplemented within certain timeframes according to changes in economic and social development. Government data openness departments can conduct self-inspections based on the comprehensive open data inventory, thereby improving the efficiency of data openness [19].

### 3.2 Data Property Rights System

China's current data property rights system construction faces problems such as unclear data property rights definition, non-unified data standards, and in-

complete protection systems. To address these issues, we propose the following recommendations.

- (1) Clarify that data property rights constitute a new type of civil rights. Data property rights are a collection of exclusive rights attached to data, representing a system that adjusts interest relationships between people regarding data usage [20]. Currently, there is a lack of clear legal norms regarding data property rights. Compared with property rights, data property rights involve multiple rights subjects and diverse rights contents, making it absolutely inappropriate to simply apply traditional property rights norms to data rights confirmation. Compared with creditor's rights, data rights cannot be fully protected under existing legal systems. Compared with intellectual property rights, intellectual labor achievements are not necessary and sufficient conditions for data, providing insufficient explanatory power. Therefore, data property rights should be clarified as a new type of civil rights.
- (2) Implement a classified and graded data rights confirmation structure. From the perspective of distinguishing property rights subjects, data can be divided into personal data, enterprise data, and public data. Ownership and control rights over these data at different production stages should be divided, and the rights and obligations among data producers, collectors, and processors/controllers should be defined to form a rights confirmation structure oriented toward different data production stages and different subjects [21].
- (3) Establish a unified and coordinated data property rights protection system. The current data property rights protection system is overly fragmented and has not yet formed a unified and coordinated whole. When advancing the construction of the data property rights protection system, the principle of coupling coordination should be followed to strengthen coordination between related systems. Specifically, the protection of personal data property rights should proceed from the dual perspectives of protecting personal privacy rights and promoting data collection, usage, and circulation, both ensuring that personal privacy is not infringed upon and guaranteeing the normal operation of reasonable data transactions.

### 3.3 Data Pricing System

Data product pricing forms the basis of data element circulation and trading. Establishing a sound data element pricing mechanism is of great significance for enhancing data resource value, improving resource allocation efficiency, and perfecting factor market distribution theory. Currently, data pricing faces problems such as the lack of a standardized data value assessment system, a single-level data trading market structure, and distorted data element prices. To address these issues, we propose the following recommendations.

- (1) Construct a standardized data element value assessment system. Based

on the applicable objects of the indicator system, design the data element value assessment system from two aspects: universality and domain/industry specificity.

- (2) Cultivate a multi-level data trading market. Establish primary issuance markets and secondary trading markets, where the primary market is responsible for data asset valuation and transaction supervision, and the secondary market is responsible for data element price discovery and pricing. Simultaneously, establish third-party data trading platforms, encourage specialized data aggregation enterprises to enter the data market, and support these enterprises in conducting cooperation through innovative transaction methods.
- (3) Establish a data element price supervision and regulation mechanism. Based on the “market-determined price” mechanism, prioritize exploring scenario-based normalized monitoring and assessment mechanisms for data element prices in fields with rich application scenarios. Establish corresponding supervision and management systems to avoid severe distortion of data element prices targeting discriminatory pricing and unfair competition behaviors. Additionally, establish a big data analysis-based price anomaly and risk early warning mechanism and a data trading information disclosure system [22].

### 3.4 Data Element Circulation and Trading System

The value of data lies in its utilization, and data element circulation and trading represent important methods for activating data value and promoting digital economic development (Ma Feicheng, Lu Huizhi, Wu Yishu. Development and Operation of Data Element Markets [J/OL]. Journal of Information Resources Management: 1-10[2022-09-12]. <http://kns.cnki.net/kcms/detail/42.1812.G2.20220816.1332.002.html>). Currently, China's data element circulation and trading face problems such as difficult data element circulation, unclear trading rules, and poorly developed market ecology. To address these issues, we propose the following recommendations.

- (1) Ensure efficient circulation of data elements. Establish data circulation access principles, data element circulation management systems, data element circulation identification and recognition systems, and data element cross-border circulation rules to ensure legal data sources, adequate privacy protection, and standardized circulation and trading [24]. Specifically, establish data element circulation access standards to regulate data circulation inside and outside trading venues, strengthen classified and graded identification and labeling management during data element circulation to achieve unified identification management of data resources, and actively build compliant data cross-border circulation platforms to conduct cross-border data transmission services in specific fields.

- (2) Establish a qualification approval system for data trading entities. Conducting qualification certification for data trading entities from aspects such as business reputation, professional facilities, and technical levels can not only reduce the probability of violations and breaches during transactions but also ensure the security and efficiency of data trading [25]. Therefore, it is necessary to establish professional and unified qualification approval institutions for data trading entities and strengthen supervision over data trading entities.
- (3) Cultivate data service providers and third-party professional service institutions. Data service providers constitute an important component of the data element circulation market. Under relevant data trading entity institutional norms, encourage data service providers to conduct data development, data publishing, data underwriting, and data asset businesses. Simultaneously, to build a sound data element circulation and trading service ecosystem, attention must also be paid to cultivating third-party professional service institutions to ensure smooth operation of the entire data trading process through market service guarantees.

### 3.5 Data Element Profit Distribution System

Based on the “market-evaluates-contribution, contribution-determines-remuneration” factor distribution mechanism proposed in the “Decision of the Central Committee of the Communist Party of China on Upholding and Improving the Socialist System with Chinese Characteristics and Promoting the Modernization of the National Governance System and Governance Capacity” from the Fourth Plenary Session of the 19th CPC Central Committee, and combined with the basic institutional arrangement for coordinating primary, secondary, and tertiary distributions proposed at the tenth meeting of the Central Financial and Economic Affairs Commission, this paper references Yang Mingxin’s (2022) research to propose a “three-stage” data element profit distribution system [6].

The first stage is the primary distribution of data element profits. The primary distribution should emphasize the principle of “equal opportunity,” ensuring equal opportunities for different market entities to access production factors, use data, dispose of data, and obtain corresponding profits. During the cultivation, maturity, and transformation periods of the data element market, continuously advance data element market construction by formulating cost accounting for data element resource-ization, improving asset pricing and labor distribution incentive mechanisms, and innovating development models for data capitalization operation systems.

The second stage is the secondary distribution of data element profits. The secondary distribution of data elements should be government-led, designing a secondary distribution system suitable for data element markets through taxation, social security, and transfer payments from both government budget revenue

and expenditure perspectives to balance unfair distribution between supply and demand [26].

The third stage is the tertiary distribution of data element profits. The tertiary distribution of data elements aims to achieve common prosperity, specifically proceeding from two aspects: first, establishing foundational systems for data public welfare, encouraging enterprises to provide data public welfare services, and promoting the equalization of data public services; second, implementing targeted digital poverty alleviation by conducting skills training for “digitally disadvantaged groups” to improve their digital literacy, activate data potential, and unleash data value, thereby narrowing the digital divide between groups.

### 3.6 Data Element Security Governance System

A sound data element security governance system is the prerequisite for conducting data security governance. In recent years, data leakage incidents have been increasing daily, posing serious threats to data security. Ensuring data security requires multi-party collaboration among government, enterprises, and society to implement respective responsibilities and jointly safeguard the bottom line of data security—relying on a single party alone cannot effectively guarantee data security. Accordingly, this paper proposes a collaborative data security governance model based on government supervision, enterprise self-discipline, and social supervision.

Regarding government supervision, first, improve the data security review system by conducting operational audit compliance checks, log auditing, routine security inspections, and risk assessments throughout the data lifecycle. Simultaneously, propose corresponding improvement plans for security issues identified during reviews, urge relevant departments to implement solutions, and conduct continuous follow-up inspections. Second, establish a data classification and grading protection system by classifying data according to its value, sensitivity, and impact degree to protect critical data. Third, establish a data security risk management system by setting up specialized working groups to regularly conduct risk assessment, reporting, information sharing, and monitoring and early warning work [27].

Regarding enterprise self-discipline, first, establish an enterprise data security responsibility system by clarifying data owners as the responsible parties for data security. Second, establish a data security incident response mechanism by immediately adopting appropriate solutions when data security incidents occur to minimize losses [28]. Third, conduct data security certification. Third-party data security certification can enhance data security capabilities to reduce data security risks while simultaneously increasing trust from users and stakeholders in the enterprise.

Regarding social supervision, first, conduct publicity work on data security and personal information protection systems to raise social awareness of data security and personal information protection. Second, establish data security

supervision and complaint channels so that any individual or organization can smoothly report violations of the Data Security Law to relevant departments and receive timely responses, while information about complainants and whistleblowers should be kept confidential.

China's data element market is currently developing rapidly, yet supporting measures such as data element market trading mechanisms remain imperfect, facing difficulties in rights confirmation, pricing, trust-building, market entry, and supervision [29]. There is an urgent need to accelerate the construction of data element foundation system norms to remove institutional and mechanism obstacles in data element supply, circulation, and usage. This paper begins with the value orientation of the data element foundation system and systematically discusses its main content, providing direction for further improvement of the data element foundation system.

## References

- [1] Li Haijian, Zhao Li. Data as a Factor of Production: Characteristics, Mechanisms, and Evolution of Value Forms[J]. Shanghai Journal of Economics, 2021(8): 48-59.
- [2] Cheng Lu, Chen Rongda. Data Element Valorization and Its Derived Financial Attributes: Formation Logic and Future Challenges[J]. The Journal of Quantitative & Technical Economics, 2022, 39(7): 69-89.
- [3] He Wei. Mechanisms, Problems, and Countermeasures for Stimulating Data Element Value[J]. Information and Communications Technology and Policy, 2020(6): 4-7.
- [4] Yin Ximing, Lin Zhenyang, Chen Jin, et al. Research on the Dynamic Process Mechanism of Data Element Valorization[J]. Studies in Science of Science, 2022, 40(2):
- [5] Sun Ke. Problems and Reflections on the Development of Data Element Valorization[J]. Information and Communications Technology and Policy, 2021, 47(6): 63-67.
- [6] Yang Mingxin, Wang Jiandong, Dou Yue. Research on the Institutional Path for Data Elements to Participate in Income Distribution Under the Background of Digital Economy[J]. E-Government, 2022(2): 31-39.
- [7] Shen Weixing. On Data Usufructuary Rights[J]. Social Sciences in China, 2020(11): 110-131, 207.
- [8] Zhao Li, Li Jie. Research on Big Data Asset Pricing—Analysis Based on the Bargaining Model[J]. Price: Theory & Practice, 2020(8): 124-127, 178.
- [9] Du Qinghao. The Realization Path of Data Element Capitalization[J]. China Finance, 2020(22): 34-36.
- [10] BEGENAU J, FARBOODI M, VELDKAMP L. Big data in finance and the growth of large firms[J]. Journal of Monetary Economics, 2018, 97: 71-87.
- [11] Cai Wanhuan, Zhang Zizhu. Data as a Factor of Production: Data Capitalization, Profit Distribution, and Ownership[J]. Teaching and Research, 2022(7): 57-65.

- [12] Wei Yihua, Yang Luwei. Theoretical Reflections on the Property Rights System for Market-oriented Allocation of Data Elements[J]. Reform of Economic System, 2022(3): 40-47.
- [13] Chen Laiyao, Ma Qijia. Anti-monopoly Regulation of Data Sharing by Platform Enterprises[J]. Journal of Intelligence, 2022, 41(6): 99-107.
- [14] Wei Yihua, Yang Luwei. Theoretical Reflections on the Property Rights System for Market-oriented Allocation of Data Elements[J]. Reform of Economic System, 2022(3): 40-47.
- [15] Wang Jin. Mechanism Construction and Legal Guarantee of Data Trading Venues—Centered on Market-oriented Allocation of Data Elements[J]. Jiangnan Tribune, 2021(9): 129-137.
- [16] Wang Qian. Basic Principles of Data Trading in Commercial Law Sense[J]. Political Science and Law, 2022(3): 120-131.
- [17] An Jincheng. Improvement of Data System Under the Background of Optimizing Business Environment[J]. Journal of Liaoning Administrators College of Police and Justice, 2022(4): 2-9.
- [18] Tang Yaojia, Tang Chunhui. Theoretical Logic, Realization Path, and Governance System of Data Value Release[J]. Changbai Journal, 2022(1): 98-106.
- [19] Duan Yaoqing, He Junyu, Shang Ting. Research on the Empowerment and Value Enhancement Path of Government Open Data[J]. Knowledge Management Forum, 2020, 5(4):
- [20] Tong Nannan, Dou Yue, Liu Zhaoyin. Research on the Construction of a Data Property Rights System with Chinese Characteristics[J]. E-Government, 2022(2): 12-20.
- [21] Liu Fang, Lü Yunlong. Policy Recommendations for Improving China's Data Property Rights System[J]. Contemporary Economic Management, 2022, 44(7): 24-30.
- [22] Ouyang Rihui, Gong Wei. Data Element Pricing Mechanism Based on Value and Market-evaluated Contribution[J]. Reform, 2022(3): 39-54.
- [23] Ma Feicheng, Lu Huizhi, Wu Yishu. Development and Operation of Data Element Markets[J/OL]. Journal of Information Resources Management: 1-10[2022-09-12]. <http://kns.cnki.net/kcms/detail/42.1812.G2.20220816.1332.002.html>.
- [24] Zhao Zheng, Guo Mingjun, Ma Xiao, et al. Research on Data Element Governance System and Supporting Institutions Under Data Circulation Scenarios[J]. E-Government, 2022(2): 40-49.
- [25] Wang Jin. Mechanism Construction and Legal Guarantee of Data Trading Venues—Centered on Market-oriented Allocation of Data Elements[J]. Jiangnan Tribune, 2021(9): 129-137.
- [26] Wang Lei. Preliminary Thoughts on Improving the Data Element Profit Distribution Mechanism[J]. China Economic & Trade Herald, 2020(6): 30-32.
- [27] Wang Xuecheng, Ma Haiqun. Research on the Construction of China's Data Security System Under the Overall National Security Outlook[J]. Journal of Modern Information, 2021, 41(9): 40-52.
- [28] Ma Zhongfa, Hu Ling. On the Improvement of China's Data Security Protection Legal System[J]. Science Technology and Law, 2021(2): 1-7, 75.

[29] Wang Jiandong, Yu Shiyang, Huang Qianqian. Research on the Basic Theory and Overall Design of the Data Element Foundation System[J]. E-Government, 2022(2): 2-

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Duan Yaoqing: Proposed research ideas and provided paper revision guidance;  
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