



# Internet financial risk assessment based on web embedded system and data mining algorithm

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## ABSTRACT

The Financial requirements of the investigation and the specific design techniques for Web applications in the financial services industry Web Embedded Systems (WES) of. In discussing some of the financial services industry has decision-making technology, using data mining motives are related to the basic challenge of some typical applications using embedded design, after the realization of prompt analysis and user behavior online risks Accounting Oversight Internet control, early warning accounting software module risk In the monitoring system and embedded, the construction of interest rate risk, currency risk, accounting for risk prediction of the network, warning the Multiple of supervision of discriminant analysis model, accounting for boot loader in accordance with the classification Improve internet controls and requirements, real-time early tracking alert payment network and information on the efficiency of various fees and interest, corporate accounting fees business operations and regular financial reporting system. Internet financial analysis and risk measurement receivers. As a result, to achieve real-time risk-aware network can use the Internet shows that the supervision of accounting, risk management capabilities and improve prevention.

## 1. Introduction

The advances in semiconductor technology, and the future, the new architecture has been embedded system design, including ultra-mobile device to the advent of telecommunications servers and pervasive computing era with the release of Intel's multi-core processors on a particularly large impact early human atom the processor is an embedded processor to the system about this high performance low latency, such as a control or monitoring system is very curious. To generate a minimum Based on the Intel Atom processor embedded multi-core processor configuration, and high Nano and global metal gate transistors,

Intel Atom processor embedded systems can provide real-time performance, simple possibility docking. Currently, the embedded web server used to track most songs is divided into two independent sections, a monitoring device embedded, and connected to each other by Industrial Field Bus (the IFB) server, the monitoring means which are commonly used to gather from many sensors converted digital signal "analog signal, and then to the web server, the web server will be received and after sending the data through the data broadcast network normal computerized. To monitor the intermediate process between the

two portions will greatly affect the reliability of such precision, stability, and other real-time performance, based on this new embedded multi-core technology, herein the most traditional system presents the web server one embedded web server system.

The new structure for monitoring and embedded operating system reconfiguration, as well as the system. In this system, in parallel with stored to be able to process analog signals from different sensors, such as sampling conversion, it is possible to perform other processes such as webcasts and in parallel mode, and a high real-time performance. System administrators, all can collect data from the monitoring target area, and the related information including the past data on the Web browser of the remote computer, viewing, in order to ensure safety in the production process, to assess the state of each device. Research also shows an example of an application of a high real-time.

Fig. 1 Show With the use of new technology agency, Web services, and the Internet more and more widely disseminated. Not only need to connect a computer to the Internet, do embedded devices. In the embedded device side, connected to the Internet leads to more features and higher performance. The ampler range is listed there is on the other side of the Internet-connected devices in embedded applications. Many of the Internet technology, Web server, such as Web services, has been

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used in embedded systems such as the Internet device can be used in many ways. Embedded systems are immutable, while in a normal network it are variables. It are flexible while having a big gap. For example, it has no web pages and is designed for most screens for embedded devices.

Web services are constantly changing, which is difficult for embedded systems. How can embedded systems adapt to changes in the Internet this is the main issue described in this article. Initially flexible shows the current shortcomings of the network technology and embedded structure. After that, new architecture embedded agent system, has been proposed by the theory of the reagent. In this architecture, the agent manager is an important part of the discussion in more detail. Finally, examples of power source is designed to verify the feasibility of this architecture. In place of the concept, proxy to use the application. As there, there is a thing of the application only in front of the embedded system. However now are in order to perform a task together, and provides a plurality of agents. Function, in the use and operation level, the drug, can be divided into different types.

The main purpose of the design of embedded software, is to build a multi-agency environment. In cooperation with the assigned agent and the environment, cameo only separation. In contrast, change the agent operating in this environment. It should not find in embedded systems. In the implementation of the functions of the embedded system, the drug can be added to or removed from the dynamic requirements that bring flexibility to the embedded system. These drugs are divided into local agent, custom agent and mobile agent. Local agent, is intended to be embedded in the permanent apparatus for implementing the operation of the necessary functions can be strong. Later, according to the requirements of simultaneous addition of these drugs, and run for a long period of time, until the unwanted features, known as custom agents. Sent here to implement the temporary presence function it may be referred to as a mobile agent.

Many of the users through the It embedded in a mini Web server to access the control or embedded devices. Or, the administrator, have the same ability to control the built-in devices at the same time. Data the administrator, in the embedded system, has created a management server or are linked, what is direct radiation. The main data management, and access in order to acquire the data system, allow the administrator to external users need to access the central management server that controls the system. Built-in mini Web server, at the same time can create multiple users with external data in an embedded system needs, users who visit is not enough to do in the case of partial information, real-time embedded systems mini Web server can be used. However, that special quality mini Web server running on embedded devices need

to obtain a user's limit.

## 2. Related work

In the long production cycle sake, mining companies is difficult to adapt to changes in demand and supply of mineral products [1]. The company's business plan cannot be made to follow the trend of rapid globalization of the mining industry. Mining enterprises to develop business plan is an important part [2] management of mining enterprises. Currently, generated by the mining companies and the systematic collection of information is not a scientific analysis of large amounts of data resources [3]. These data do not provide for production management and decision-making mining enterprises to provide adequate support for the process [4] in. Therefore, the effective analysis and forecasting model of mine to establish the technical and economic data is the importance of the mining companies. Currently, a large number of mining enterprises produce information systems and data resources have not been collected scientific analysis. These data do not provide for production management and decision-making mining enterprises to provide adequate support for the process [5] in. Therefore, the effective analysis and forecasting model of mine to establish the technical and economic data is the importance of the mining companies. Many studies related to technical and economic data [6] analysis and forecasting methods. Reference lack of economic analysis of business data mining, prediction and interpolation methods such as average method, the weighted average method, linear regression, and multiple imputation method maximum expected methods.

Collecting drilling data found that global trends and heterogeneity exists in the data. Data is converted into a normal distribution, and the heterogeneous data is rejected, thereby improving the interpolation accuracy [7]. In order to improve data analysis, mining basis of enterprises on mining enterprises technical and economic data, commodity prices and the prediction and interpolation model prediction mode geological lost data by characteristics of the method of statistical and artificial neural networks, the establishment of [8] technology . Predictors of data objects can fully analyze and use these models to use. The effects of different objects can be described as a change of the predicted factors. The basic theory is that, after the prediction accuracy is determined, the functional relationship between the input and output are / will be used to train the network training samples [9] holds. Herein, the artificial neural network back-propagation algorithm is used to predict commodity prices and geological prediction and interpolation of missing data.

Three-layer neural network model applied to these established / the

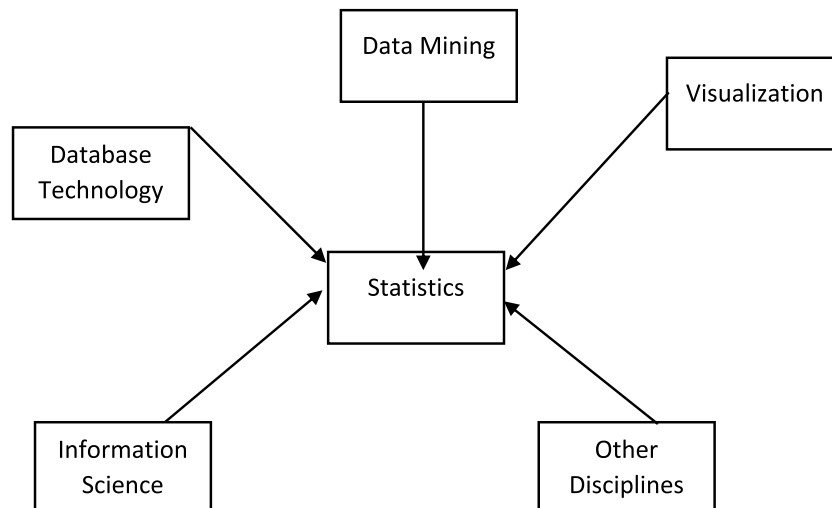


Fig. 1. Data mining diagram.

prediction and interpolation modes. Sources and beyond any previous digital data repository is estimated to increase every day. Data center and support Internet Web server applications are continually becoming more common and distribution. When the data source is very large, general [10] data examination submissions and facilities, programming, it an essential to them information. Enable the different dispersion models and paradigms writing, it must deal with the relationship between the need for a new way of hardware resources and programming level. User can are working in the field of big data, experts and scientists, the need for sophisticated data analysis tools, plus scalable architecture, to extract useful information from the service of such a large resource base of support. Cloud computing platform provides a solution to these two large parallel data mining and knowledge discovery genuine support and scalable computing applications [11] Data storage is required.

Involved complex data mining tasks to provide sufficient time for centralized data and computationally intensive algorithms, performance results, coupled with large processing units, and requires an efficient storage facilities. Cloud computing model system to realize the service of virtualized resources, can be extended to users and developers through a dynamically Internet. In fact, the cloud can be achieved by developing a method for the service to meet the needs of and organizations scalable [12] computing and storage delivery platform. The emergence of cloud provides a number of facilities, many users are In order to run an application or service will not be able to have their own high-performance computing system. In particular, the operation from using the necessary and cloud platforms to access large-scale data analysis applications, complex mining algorithm very large data sets will greatly benefit. This article deliberates to brand figures breakdown service station for scalability introduced specifically for the development and implementation of distributed data analysis applications as services [13] workflow mining cloud computing framework. The developers of the data set environment, implementation analysis tool as a single service, the data mining algorithms and knowledge model, can be used. Each single service is may be distributed by a combination or visual workflow script running [14] Cloud programming interface. It has been described main programming interface function, performance data analysis of scalable applications. Information technology and universities, financial informationization of financial management, and the development of digital campus systems [15] have become an important component.

The bond between the University of Significantly, a large influence to improve the efficiency of financial accounting and financial analysis while playing, control the different aspects of supervision and decision-making financial, information technology, rather than only. Currently, the university has expanded its online services, thoroughly to improve the efficiency of the financial staff, are doing the prudent financial operations, deepen the financial analysis, financial information required in all aspects of college [16] according to the new accounting system. Therefore urgently need for the management and development of a comprehensive school of information management solutions to meet the needs of all levels of the School of Management, and meet the requirements of management and fund management to meet the accurate, efficient and safe all universities Finance [17]. Financial management software and services, universities need to exchange [18].

Communication with multiple departments and data services. However, Different departments, therefore, use their products from different vendors, the low-level function data exchange of information, low efficiency leads to differences in general "information separator", and shared [19] exists. Reinforced More To be effective DO integrates economic administration material stand, Height and other practical financial channels, and therefore internal audit control in order to improve overall basic accounting skills, financial management and oversight, financial information management solutions, management solution assets, comprehensive budget management, project management, contract management, enforcement discussion. There is a diversity level of technical support for this statistical analysis and

management, scientific decision making [20].

### 3. Material and methods

Consistency of business and financial information, In order to achieve synchronization and integrity, fully dynamic budgeting, financial management and financial analysis, flexible open, genuine and other business school systems - transmission time information, enables dynamic integration core financial accounting system, the wage compensation system, tuition it provides scholarships, as well as online business platform of comprehensive budget management system, online payment platform, data analysis and data: financial information contains the implementation of the management solution mining for financial services, as well as security and data backup, conversion of data and systems. In addition, secondary development, maintenance, and financial information contains the optimization of management solutions.

Fig.2 shows, it is not possible to display only the financial information system, analysis of financial and business data, can also, through a data transmission platform to display data, extract the person in charge, research, to convert the data to the display platform of data services can be done. Various graphical, statistical data, to provide a corresponding data analysis, using this system. Master data collection, data exchange platform, configuration management tools, data extraction and conversion offers. Extraction of the data exchange platform based on heterogeneous data sources such as relational data, distributed, washing after conversion, integrated temporary intermediate layer, and the final data set is loaded into the system and become the online analytical processing and data mining.

#### 3.1. Data mining

Classification and machine learning prediction algorithms generally require that all training data is resident in memory tree during construction. The system does not use any data mining feature database data warehouse system. Use some data from an external source, mining algorithms process the data, and then stores the result in another dig it out of the data file. Such a system does not take data in a database / data warehouse are often well organized, indexed, cleaning, consolidation or merger of the facts. Classification is a two-step process. Model learning step in the first step is to establish a set in the description of data classes or concepts predetermined learning algorithm and decision tree. The attribute selection algorithm, the average result is used to determine the entropy function class. Data mining algorithms are necessary, it can query the metadata and additional data point to the meta-knowledge.

##### Algorithm Steps

**Step1:** Initialize the input data.

$$p_{ab} = ab_v + pb_r \dots \quad (1)$$

Here I am the input source customer, and rw is the ever.

**Step2:** a Risk Analysis.

$$I_{rw} = r_{s0}, P_{c-} = -P_{s-1} \dots \quad (2)$$

**Step3:** find Financial Risk reaction.

$$I_{rw} = I_{s0}, P_c = 0, P_{c-} = P_{s-1} \dots \quad (3)$$

**Step4:** the risk find Classification Activity.

**Step5:** every Risk segmentation in a module.

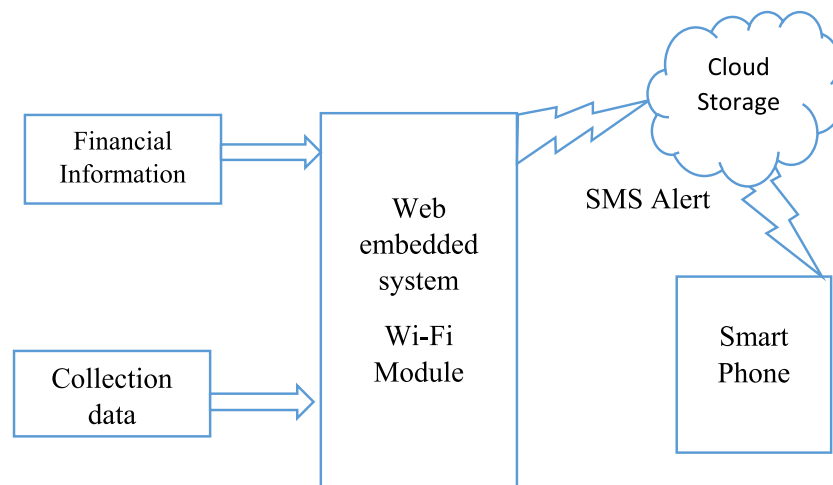


Fig. 2. Financial risk proposed diagram.

**Step6:** using embedded system in Data mining technique in output of Risk development.

The algorithm model requires two key components. A range of tools and technology expertise. It suggested that the data mining industry should go to the next step and develop multi-modal algorithm consists of a series of mining and modeling tools and technologies. "Intelligent" agents can be used for this purpose. Another strategy is to use cluster technology. Including groups each containing one or more forces modeling techniques. In addition, there are programs, such as active learning techniques.

### 3.2. Web embedded system

Communication and the class is typically proprietary protocol used for communication in the present case, the class. However, when a new communication method, such as IPv6 has been translated into practical use, and telephone-based appliances plane protocol must be standardized. However, all the appliances are becoming multi-functional system to control these functions are becoming increasingly large. About equipment, can also plans to work on the device using the same time standard system synchronization. In this case, an accurate time sharing system will be required to provide accurate time information for each device and the synchronization between them. In addition, this time should be based on the best information available at low cost, and stability at home. In order to achieve the desired system, various devices necessary for the time information captured may be considered, for example, real-time clock in the microprocessor unit incorporated in a plurality of appliances. However, since it is based on the principle of an inexpensive quartz oscillation circuit in this alternative low accuracy.

### 3.3. Financial risk

Our company has built classification system to identify a successful primary task of the economic situation and vice versa. So use the N in a subset of the data to predict economic behavior considered financial items. Classification issue considered here is quite close to the main difference between failure prediction problems is to find the company from the point of view of the application. In some outside analyze failure prediction question sheet items of the company to provide early warning signals about the close of business failures. This incremental files remain in the company's credit rating practices in question taken, but the behavior What are the major balance sheet items address drew attention to the actions taken are to achieve outstanding results of its economic activities of key balance value fold project. However, the financial

system of fully market-oriented, always, are not useful or beneficial to the financial system and the real economy, has brought innovation and more competition.

Fig. 3 show Therefore, it is difficult and presents a thorny problem: excessive financial regulation is competition in the market in up to plunder the end of the year of public property, financial innovation, to maintain the vitality of essential economic entities, the lack of financial regulation only a handful of individuals can be suppressed, it will endanger the stability of the natural financial system.

## 4. Result and discussion

In the economic boom can be seen in the higher investors' optimism, its fair value and the measurement needs of the current market price of all items in its financial statements on behalf of major assets of the lead. Using this concept refers to the transition from the principle of prudence and conservative financial reporting history of the concept of cost. In the Financial Accounting result in higher profits or losses revaluation of assets or liabilities trends affecting the company and the concept of fair value. Users in conditions of economic crisis to reassess their views on accounting methods, particularly the accounting basis.

Table 1 shows, when trying to find a reason to get rid of economic crisis can hear the views of this is the use of the economic boom of fair value accounting gives a very optimistic message. However, history has been developed using financial instruments in financial reporting paradigm shift in business literature, international accounting harmonization begin previous studies, and continue to pose specific questions related to financial instruments. Method presentation area being analyzed, that is identified as corresponding to the country by two theoretical description and empirical analysis, the report foresaw the special nature of financial instruments, and constantly develop links results to actual knowledge of specific methods of field theory stage.

Table 2 Show in Shareholders, then the conflict situations may occur, and an external board members. Between a significant amount of the comparative encouragement of separate boards and found a positive correlation interest derivatives used. On average, the use of interest rate derivatives business proved beneficial to shareholders, although there is no evidence for the benefit of the manager.

### 4.1. Financial risk accuracy

As long as there is no concern about the method of another interesting question for investors in their own or use derivatives, so that can use the results of their decisions, to provide a different prediction on the basis of a variety of theories, evaluate management options do. If found,

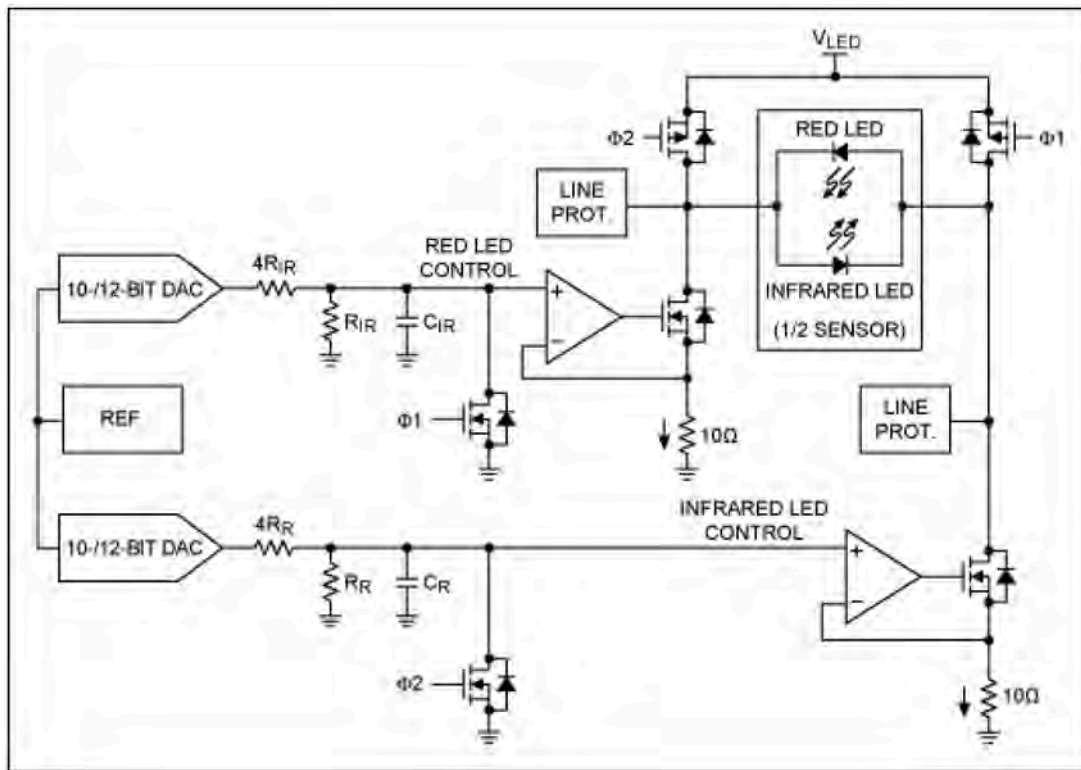


Fig. 3. Financial risk -web embedded circuit diagram.

Table 1  
Simulation parameters.

Limits	Importance
Run Tool	.net
Facility	Value of Process
Transferring data	250
Data size	500mb
System	5 <sup>th</sup> G

Table 2  
Financial risk accuracy and efficiency.

Year	Accuracy	Error rate
2010	49%	43%
2013	78%	65%
2017	83%	78%
2020	90%	90%

investors are more and more companies of management and administrators, if can use the derivatives business address, are satisfied with the high value assigned to the company, it, please do not endanger the ratio. Their study also highlights the investors of the idea that I think the decision of the derivative that it is the use of derivatives manager show than those who do not use a higher level of care in these examples. In addition, it showed a large decision-making concern about these inferences system.

Fig. 4 shows which broke out in the early subprime crisis has evolved into a full precision around this year based on the collected financial crisis look at financial risk. This Research argues that such financial risks on behalf of a greater degree of credit risk. In this Research, data mining is focused on financial products, discuss the risks of financial derivatives subprime mortgage crisis, and analyze their impact on the financial crisis. Article main body divided into three parts. The first is the theoretical analysis, the report pointed out that the issue of how excessive

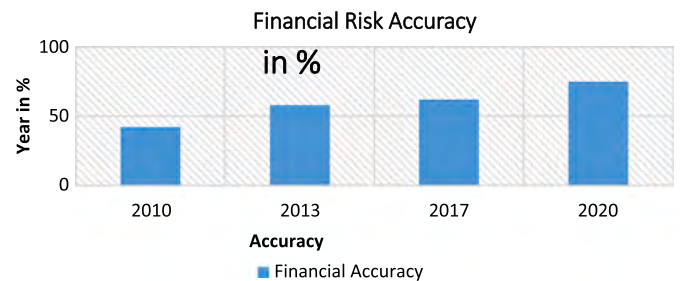


Fig. 4., Financial risk accuracy.

financial derivatives triggered the financial crisis.

#### 4.2. Financial risk efficiency

At the same time in the development of structured financial products, mortgages, bonds and other securities involved in the leverage and risk is magnified to a hundred times. High-yield and high-risk. For some time the yield is only at the middle level in the market. Potentially high investment returns some investment banks to engage in financial derivatives are very interested, because of the high risk and high leverage is a high risk of its basic characteristics. In the meantime, hedge funds by five to fifteen times the leverage to get a mortgage bank, and then continue to invest in new financial derivative products.

Fig. 5 shows FDMA Development of financial intermediation industry is constantly accompanied by financial innovation. Recently, it have received, it emphasize specific terms and information technology connections. The researcher believes that the financial micro level is not fundamentally different from the financial innovation, but at the macro level, it is for financial system reform influence from significant potential. The fact that the research questions, including financial capacity, increase the diversity of the Structure of the financial competition and

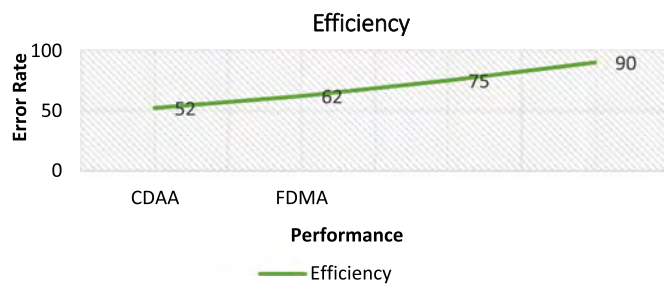


Fig. 5. FDMA based financial risk efficiency.

efficiency, the banking system not only creates a potential opportunity, but also a new type of risk and financial instability.

## 5. Conclusion

Reality tells us that there is no ready-made solution, each country should seriously consider ways to develop its standards before selecting an option. Successful accounting reform depends on the development of an appropriate set of accounting standards and the development of corresponding accounting industry's financial framework. Institutional mechanisms should be established to ensure fair and transparent standard setting procedures, so that all interested parties to express their views. It also does not mean that the accounting regulatory process is complete, it is a further need for flexibility to provide adaptability for future development. Confidence in the accounting system necessarily mean that the accounting profession's confidence, it's competent and independent professional role development and implementation of accounting standards.

## Declaration of Competing Interest

We declare that we do not have any commercial or associative interest that represents a conflict of interest in connection with the work submitted.

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